

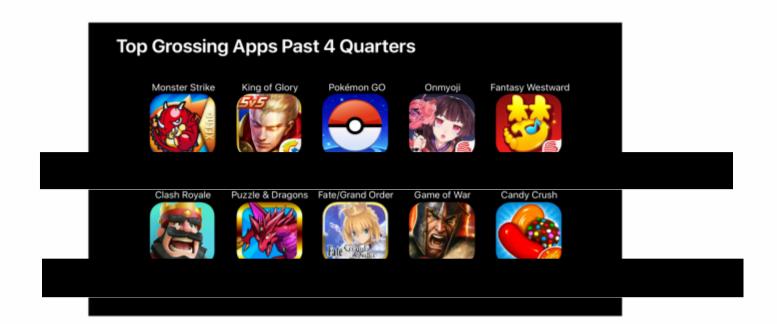






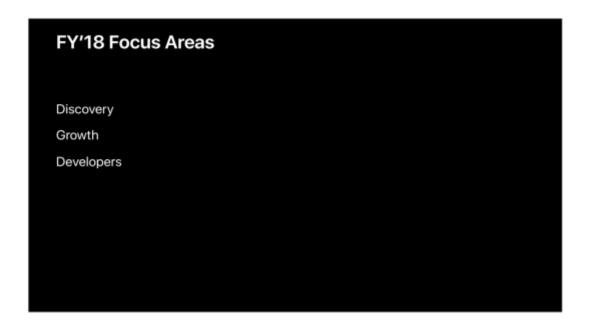


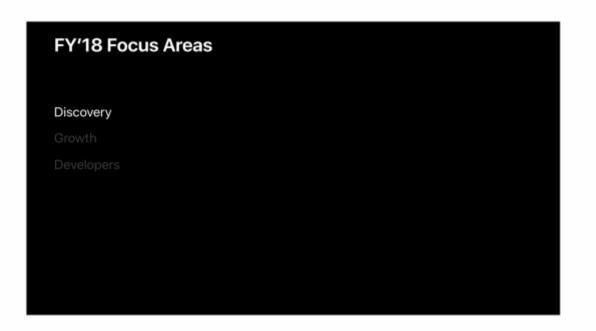
· Data updated to 10 July



TODO: which direction are these apps heading in.







[MATT F.]

-First major focus next year is discovery

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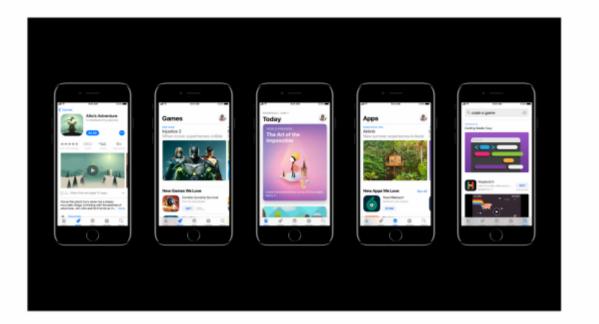
Discovery

All-New App Store

Personalization

Editorial Content in More Places

App Nutrition Labeling



Top priority for the rest of the year is the All-New App Store...

- -Aggressively hiring against recently approved headcount
- -Great momentum towards launch, feedback has been terrific
- -Will closely monitoring impact on engagement and conversion

All-New App Store

Very positive response from developers so far

Key hires from WSJ, Buzzfeed, Sunday Times (UK), The Verge

Daily Today stories begin on 8/24 in US, 9/4 in International

Scaling a new store:

More developer collaboration and coordination required by Business Managers More local marketing support needed in Tier 1 (China, Japan, UK, Korea, Taiwan)

- -We've learned a lot
- -Higher touch required by Business Management to ensure higher quality story ideas for Today, Games & Apps
- -Need more local marketing support for Tier 1 countries internationally [Handoff to Jeff]

App Store Redesign

Editorial context on Today cards

Ambient Background Video

Editorial copy for collections

Story preview (Tools)

Text formatting options in Stories

Text sub-header module

Swoosh of Stories

Editor's Choice Date

Editor Genre Attribution



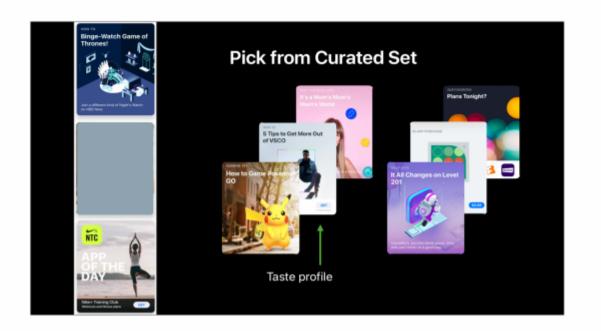
Personalization

Deliver relevant editorial content on Today, Games, Apps and in Search
Editors tag apps and in-app purchases with qualitative metadata
Integrate behavioral signals with editorially curated data

[JEFF R.]

-Today the store is one-size-fits-all, major focus for next year is personalizing the store to deliver more relevant *editorial* content to each customer throughout the store



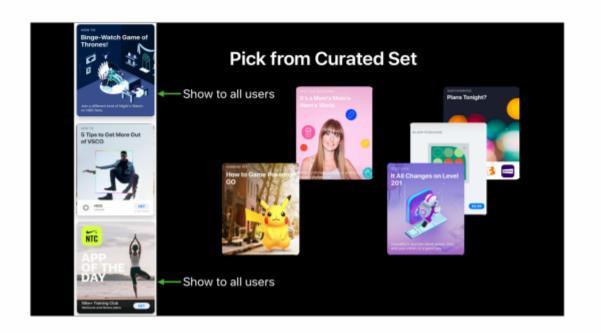


- -Personalization can mean different things to different people. Our approach is to:
 - -Retain our editorial voice by picking from a curated set of recommendable apps that have been evaluated by editors.
 - -Target users with relevant content in certain areas of the store
 - -Reorder content to show most relevant content most prominently
 - -Showing/hiding content based on relevancy

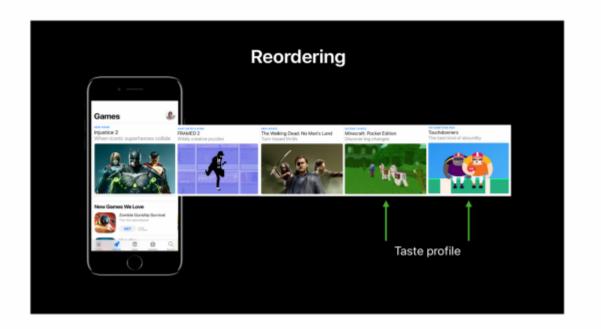
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- -Our algorithm would pick relevant content from this curated set based on user's taste profile.
- -If the taste profile includes "Photography"...

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- -We can pick an editorial story about photography over other stories to show the user.
 -The other two cards could be shown to all users.

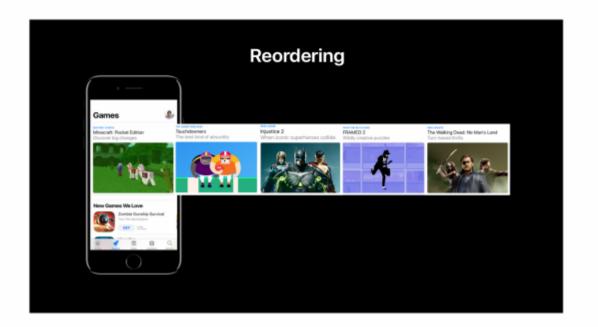


- -Another type of personalization: reordering and sorting
- -Example: Games tab, row of hero games at the top, all have been programmed by Editorial.

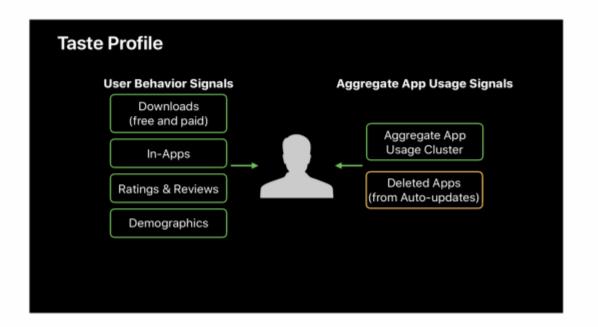
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- -Customer's taste profiles signals they have Minecraft, and like sports and physics games
- -We know know first slots in the row are most impactful

<CLICK>



- -Reorder the heroes so most relevant content to user shows most prominently
- -Will apply same techniques throughout the entire store all tabs and search



How does this work?

-Need to understand the user, understand the catalog.

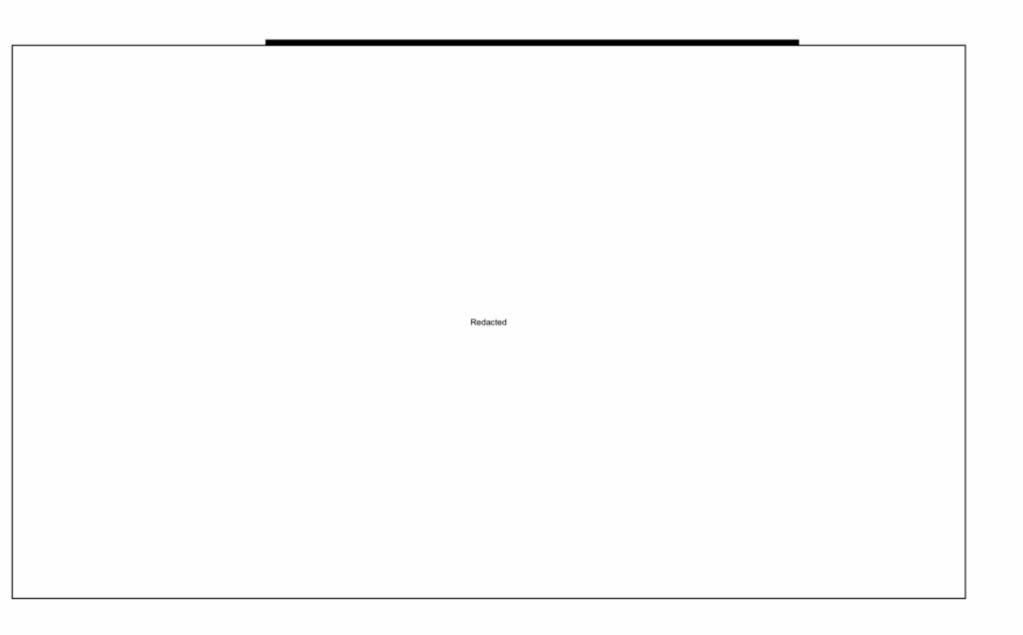
User Taste Profile:

-Behavioral signals: downloads, IAPs, Ratings & Reviews, Demographics.

Aggregate App Usage Signals

- Since we don't use all of the usage data, what we're going to do is use aggregate data, focus on not using individual usage data
- -For the people who have opted-in to aggregate targeted app usage clusters, that's individual usage. We don't need to use that to start
- -Leverage aggregate app usage cluster info and data on deleted apps that weren't useful to users
- -Ongoing Privacy Discussions on App Usage clusters

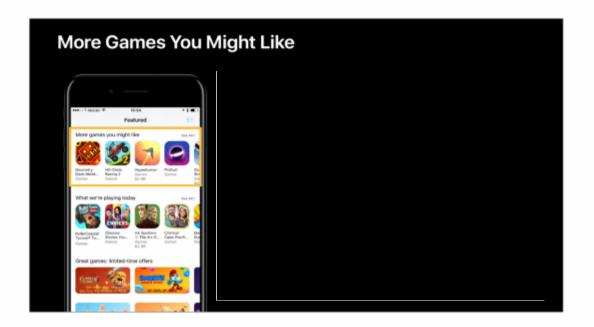
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- -Infrastructure investments in datacenters to power personalization
- -Learned some lessons on potential impact from some personalization we've done on the storefront with More Games You Might Like...[handoff to AYMAN]

Requirements Investment in editorial, tagging and reporting toolsets Privacy sign off for necessary data collection



- · More Games You Might Like is the only personalized swoosh on the current App Store
- Results are positive we see twice the click-to-download conversion rate vs other swooshes on Apps Main
- While this bodes well for further personalization, it's unclear of the full potential upside of doing this for both apps and games across the entire store.
- That being said, we're going to give games personalization a higher downloads lift (vs. apps) given we've had more experience in this area.

Featured Content, iPhone

Impact Model Methodology & Assumptions

Observe values for Featured Games & Apps in current App Store

Consider More Games You Might Like impact on conversion

Featured Games & Apps downloads increase

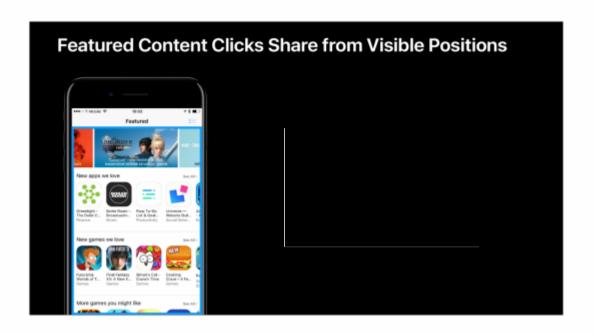
Featured Games LTV increase

Compute annualized incremental billings

Here is the methodology we used.

- . We looked at the metrics for all featured games & apps on the current store
- · We considered the results of More Games You Might Like
- Our model applies a download lift for Featured Games & Apps and a download LTV lift for Featured Games
 - Personalization should lead to higher LTV per game download.
 - The reason we believe this is that the content is more relevant to the customer
- Looking at the current store, if you download a game like Candy Crush from the Featured Tab it's worth from Facebook it's worth which speaks their strong ability to target

. With all of that we compute annualized incremental billings



The other thing to note is that clicks are heavily weighted to the most visible positions of the store:

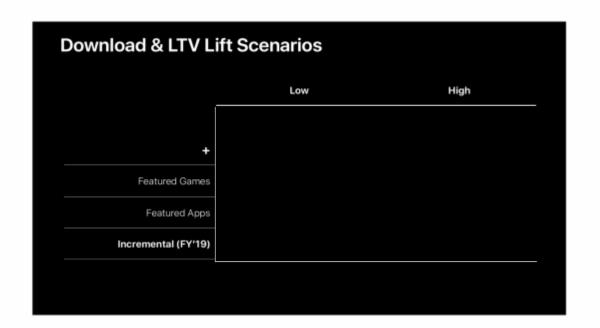
Share from Visible Positions, iPhone



How that translates here in a few scenarios from the less aggressive to the more aggressive.

Download lifts in games range from while apps are a little less with we add on the LTV bump for games

With that we arrive a year one incremental billings range from



Here is how that translates into low and high sce	narios
Download lifts in games range from	vhile apps are a little less with
We then add on an LTV bump for games	
With that we arrive a year one incremental billing	s range from

Editorial Content in More Places Add Today content in left-of-home position Siri and Spotlight support

- -Investing in incredible Editorial content, want it in more places to drive users to the store from other places in the OS
- -Exploring build a widget for LoH
 - of Apple News traffic comes from LoH position
- -Content would ideally be personalized
- -Looking into how Siri and Spotlight could surface Today stories, collections, lists too, in addition to the apps they recommend today.

App Nutrition Labeling

Highlight Accessibility

Support Apple technologies: Apple Pay, ARKit, Metal, CarPlay, HomeKit, etc.

Provide users more transparency

Privacy, ads, IAP range, location, contacts, battery

Over-the-air download size

Higher ranking in recommendations, search and featuring where relevant

Developers will claim what features and technologies they have enabled and App Review will verify—tougher to do with some features so avoiding false positives is critical

Highlighting when an app utilizes accessibility features

Voice over, screen control, all accessibility features, captioning in videos

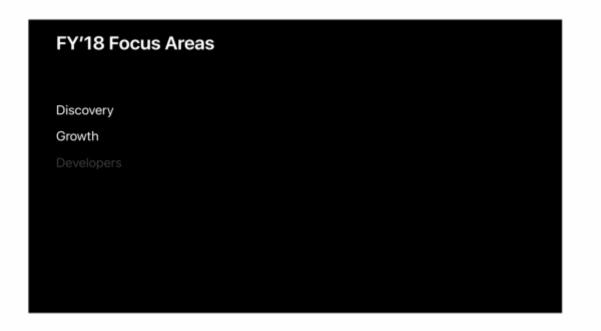
Additional Apple technologies: Apple Pay, ARKit, Metal, CarPlay, HomeKit, etc.

We hope more transparency will drive good behaviors in the developer community

Device size-calculation:

- -Top-requested feature from developers.
- Show installed size, which varies per device. Updates sized differently.
- -Display what will be sent over the air.
- -Customers are choosing not to download an app as the size is incorrect, (installed size today), they believe download size is going to exceed their bandwidth allotment
- -Important to emerging markets

Take into account for ranking in recommendations, search, featuring



-Second focus area for FY18 is growth.

Growth

Apple Games Subscription Service

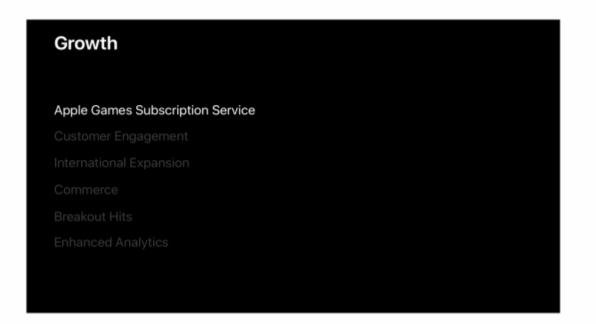
Customer Engagement

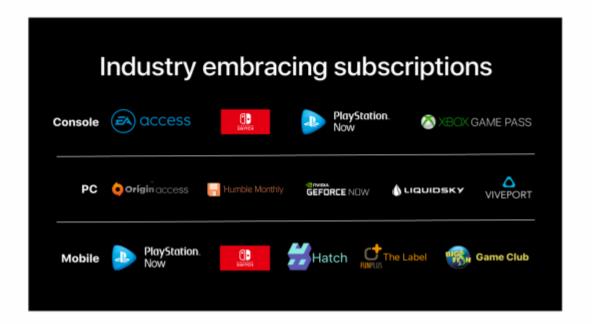
International Expansion

Commerce

Breakout Hits

Enhanced Analytics





All mobile services announced but not launched

Console:

- EA Access: July 2014, Xbox only, Download only, \$4.99/month, only EA titles
- PlayStation Now: Jan 2014, PS3, then PS4, Streaming, \$19.99/month, only PS3 games right now
- XBOX Game Pass: Announced launch in Spring 2017, XBOX + Windows 10, download only, \$9.99/month

PC

- EA Origin Access: Origin Access, Jan 2016, PC only, Download-only, \$4.99/month, only EA titles
- Humble Bundle: Nov. 2015, PC only, Download-only, \$12/month, 100K+ subscribers
- Nvidia's GeForce Now: 2015, PC only, Streaming access, \$25 for 10-20 hours of streaming play (depending on device)
- . Liquid Sky: Beta announced for early 2017, PC + Android, Streaming access, Ad-supported or \$9.99 for 20-80 hours of streaming play (depending on level

Mobile:

- PlayStation Now: Not-yet-announced mobile extension of an existing streaming service for PlayStation users, Streaming access to over 450+ PS3 games to start, with PS4 games to follow.
- Hatch: Spun off from Rovio and launching in 2017 (Android first); Streaming access to over 100 mobile-first premium games from over 50 developers; Ad-supported business to start, followed by an ad-free subscription offering.
- The Label: Backed by Chinese gaming company FunPlus; Announced that they plan to be the "HBO of mobile gaming."
- . "Big Fish Game Club," which plans to offer a subscription to its first party games catalog. Game Club is currently available on PC for \$6.99/month

Games Subscription Service

Games: 100+ at launch, 10 new per month

Play Experience: No IAP, no ads

Value: One price for the whole family, all-you-can-play

Developers: Viable model for premium mobile games

Launch Plan:

FY'18: Design, build, license, announce

FY'19: Launch, scale

Perfect for families with kids

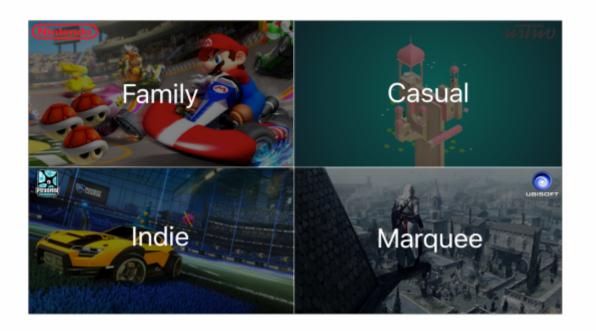
Family members included for no additional fee

No in-app purchases, no ads, no behavioral targeting

Many games appropriate for kids

Restrictions in the cloud

Privacy-centric personalization



Examples:

Mario Kart from Nintendo

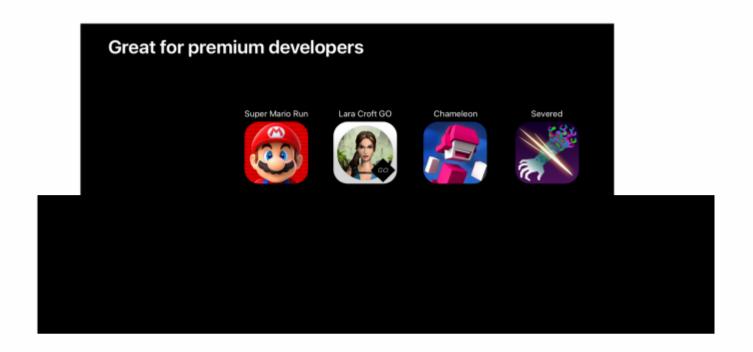
Casual-Monument Valley is the exception to the rule these days, and our service will be the impetus to bring more titles like this to mobile.

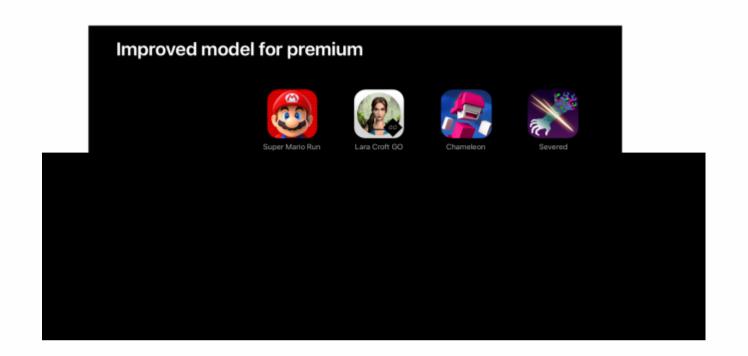
Core is a broad segment, and contains indie games as well as AAA console games. We plan to target both ends of this spectrum with games like Rocket League and Assassins Creed.

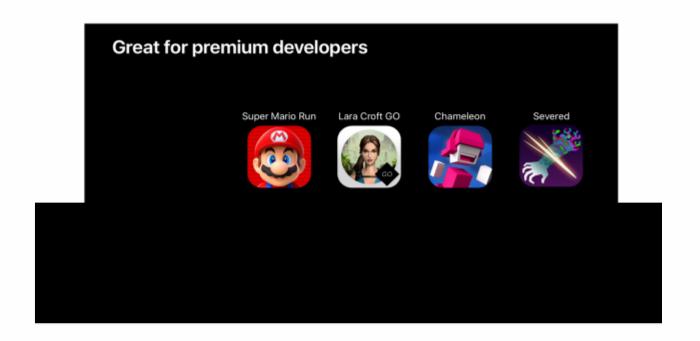


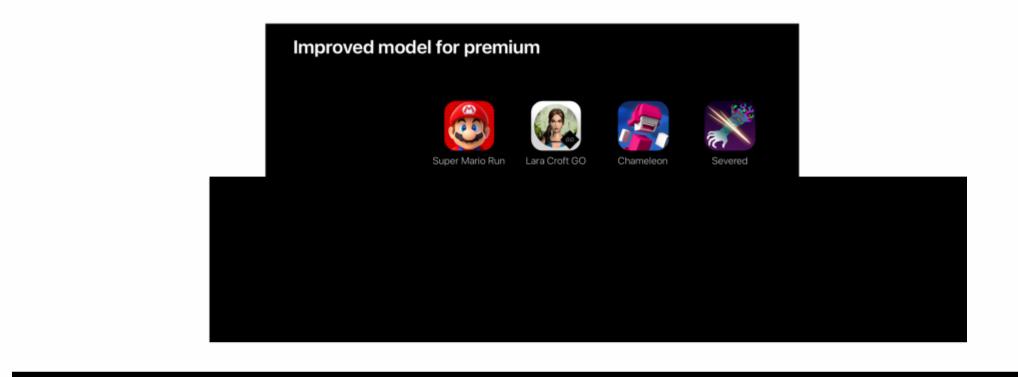


Here are the top 30 studios we'd like to target. Existing and new IP. We have a target list of a few hundred titles, but these are the developers we'd prioritize.



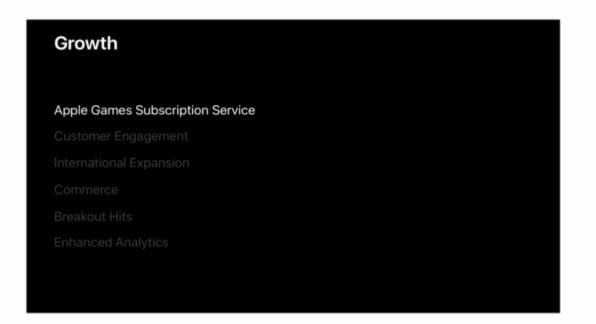


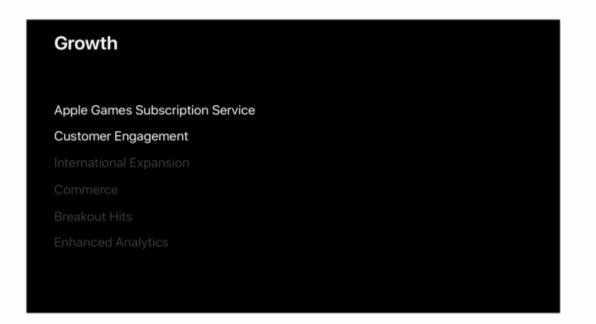












Vision Communicate with our customers in a way that is personalized, timely, and relevant that enriches their experience with our products and services.

We are talking about CRM, but CRM is a tool, the benefit and result is customer engagement (leading to customer happiness and increased LTV)



We need to be realistic, right now we are limited to one channel email

With the exception of a few manual exceptions in Music (weekly Spotlight, limited to top 10 markets EOY), our communications are generic and not personalized

Since they are not personalized, they are often not relevant, leading to reduced open rates/response, customer annoyance

Comms are also not timely, timing should be driven at the customer level, not the campaign level

Email Engagement - last 12 months				
		Audience Size	% of Active Accts	
	Transacting Accounts	958M	100%	
	Emailable Audience	607M	63%	
	Clickthrough 1x	36.8M	4%	
	Clickthrough 2x	11.4M	1.2%	
	Clickthrough 4x	3.6M	0.4%	

Email channel is dying or non-existent, especially in markets like China. We need a multi-channel approach, optimized by customer preference/response

Accounts transacting in last 1 year- includes all accounts who have made a transaction in the last 365 days

Email Openers - a combination of user manual opens and automatic mail client loads on any iTunes email in last 365 days

Email Click through - unique accounts who have clicked on any 1 or more iTunes emails in last 365 days (truest measure of engagement)

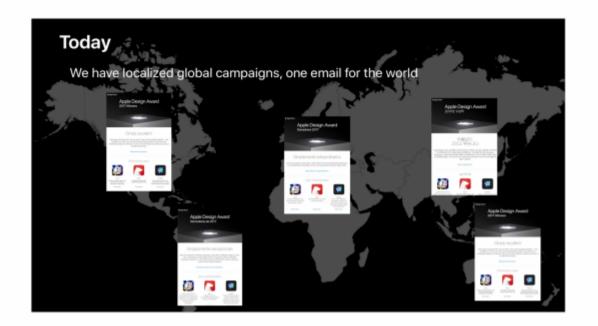
Additional Data:

Unique Responders 2x - have clicked on 2 or more emails - 11.4M - 1.2% of active accts

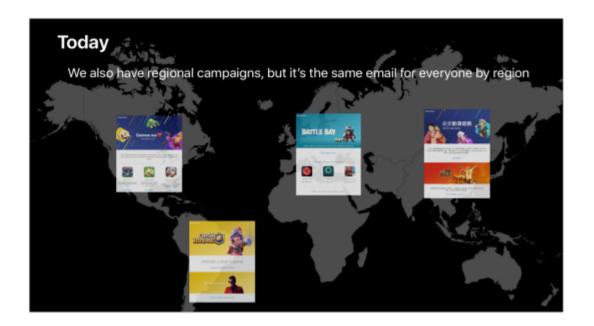
Unique Responders 4x - have clicked on 4 or more emails - 3.6M - 0.4% of active accts

Unique Responders 6x - have clicked on 6 or more emails - 1.8M 0.2% of active accts

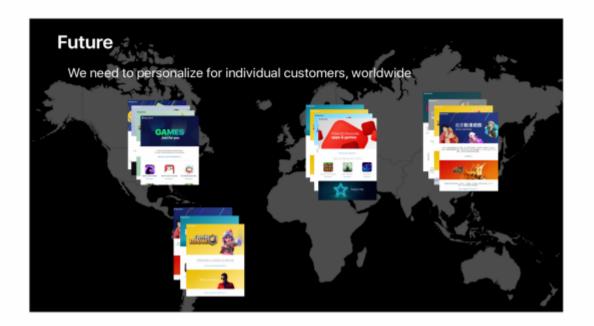
Source = GBI and ICA as of July 19, 2017



Today, we execute email one of two ways. First, we send globally relevant content, translated by Geo, but essentially, we are sending one email to the world

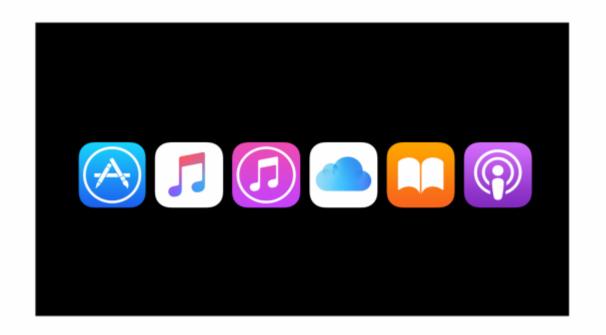


Second, we send our regional campaigns, with local relevant content, in the native language. But, its the same email for every person in that country or Region. Regardless of your previous app purchases or interests.

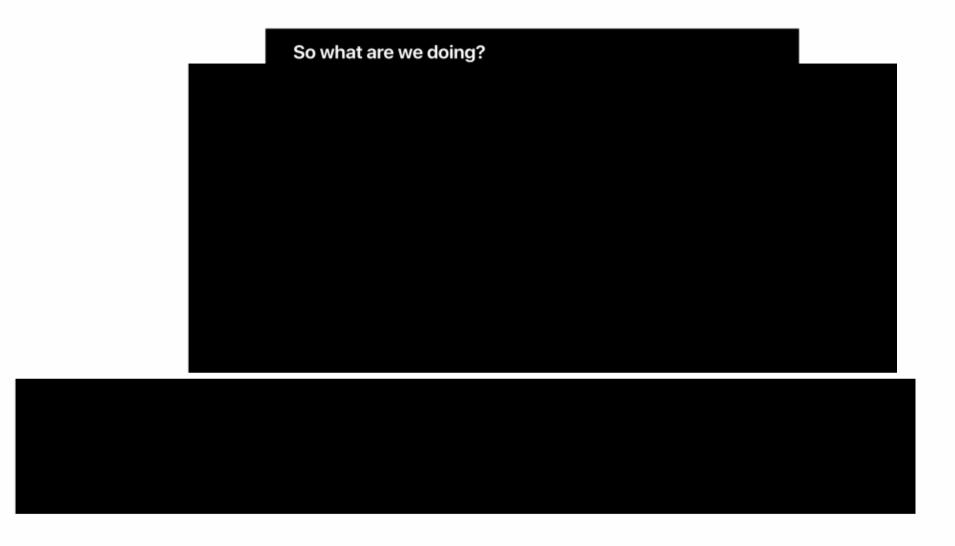


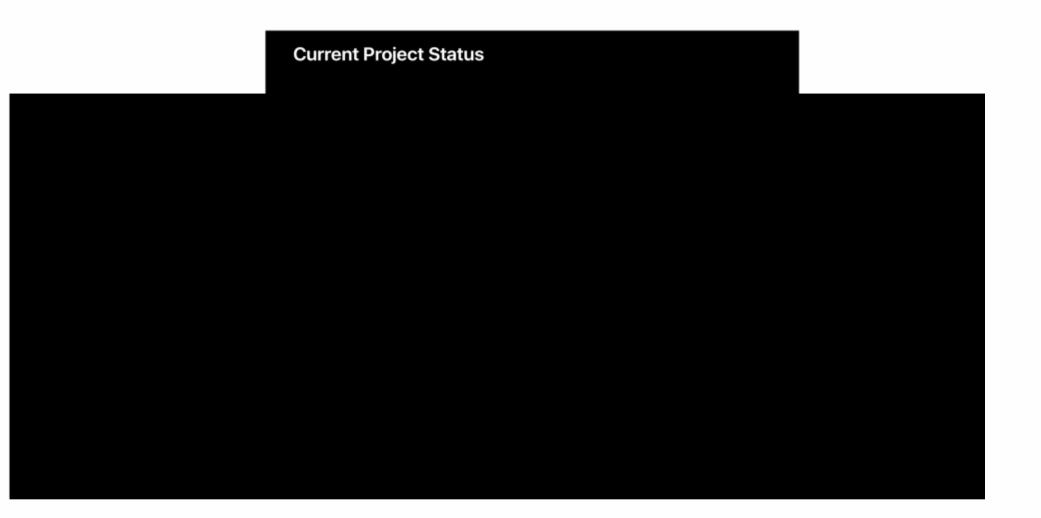
So, our marketing needs to leverage the App Store recommendations engine, so our communications to every customer are also personalized, making them relevant. Manual tests have shown significant lift in App downloads as compared to generic email (50% lift)

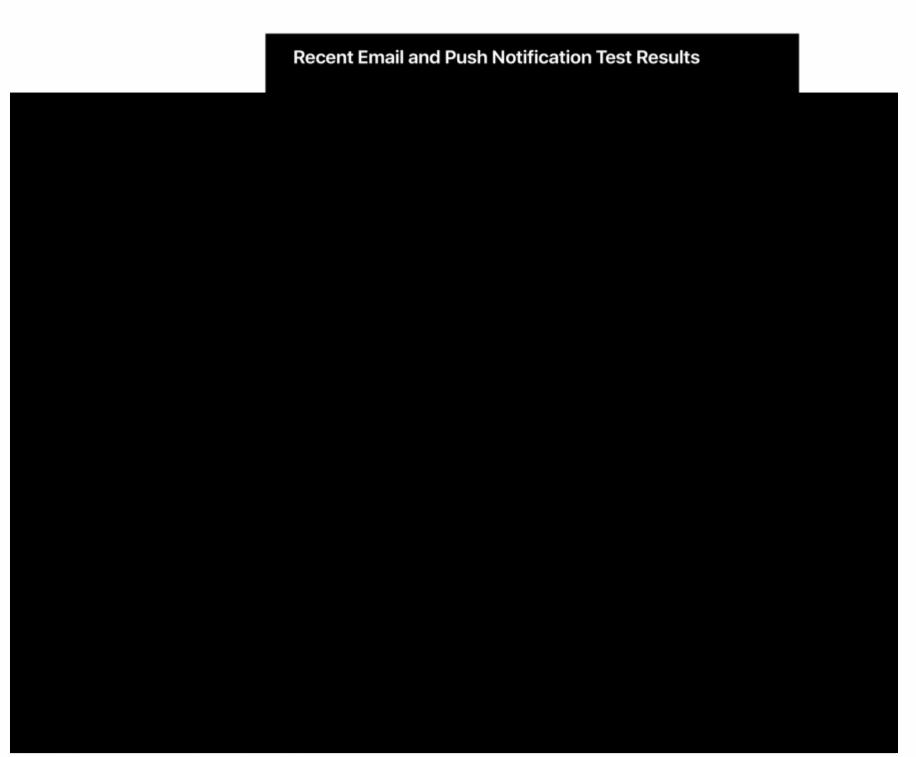


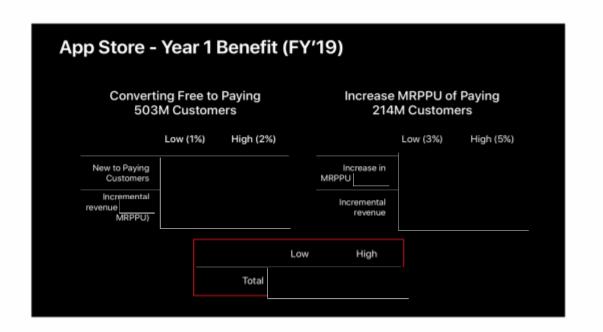




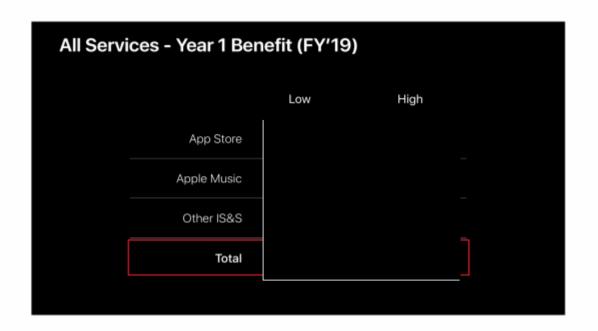








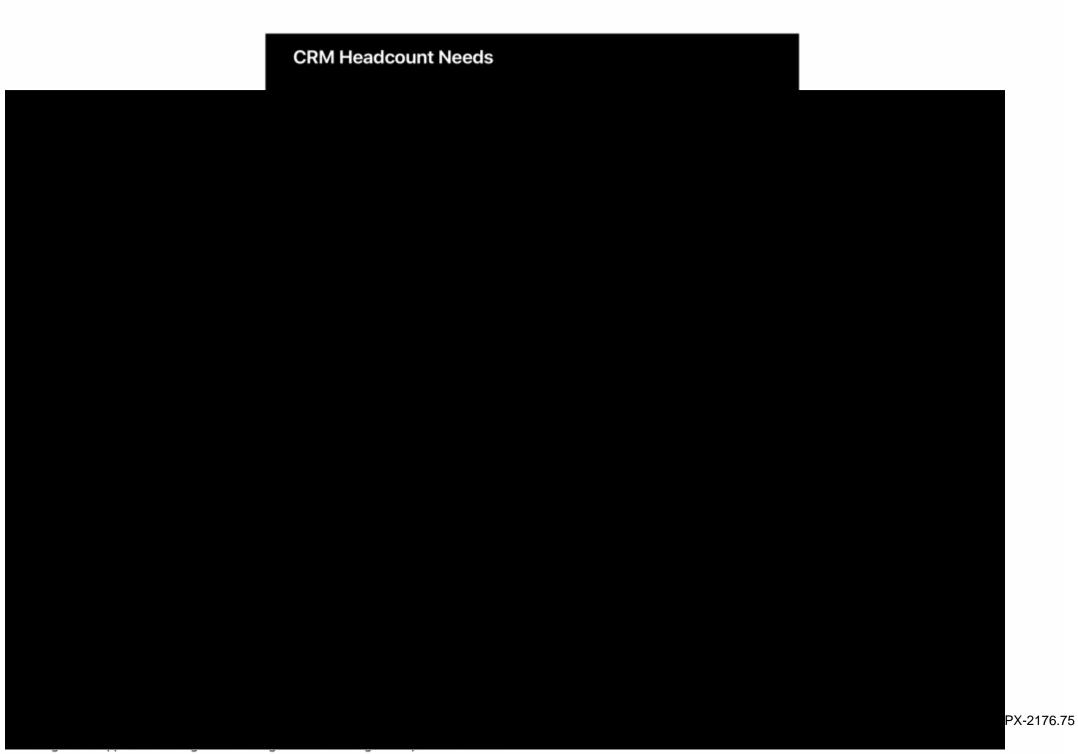


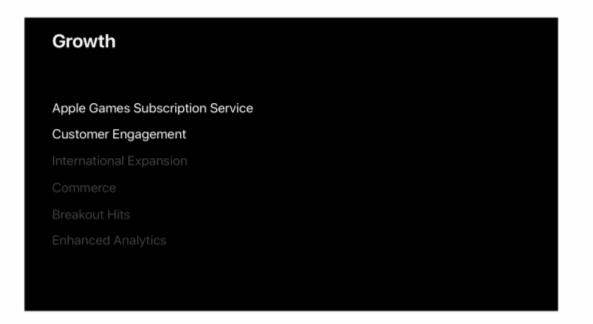


App Store assumptions:

payer conversion assumes increase in annual paying customers payer retention assumes increase in MRPPU (Median Revenue...)



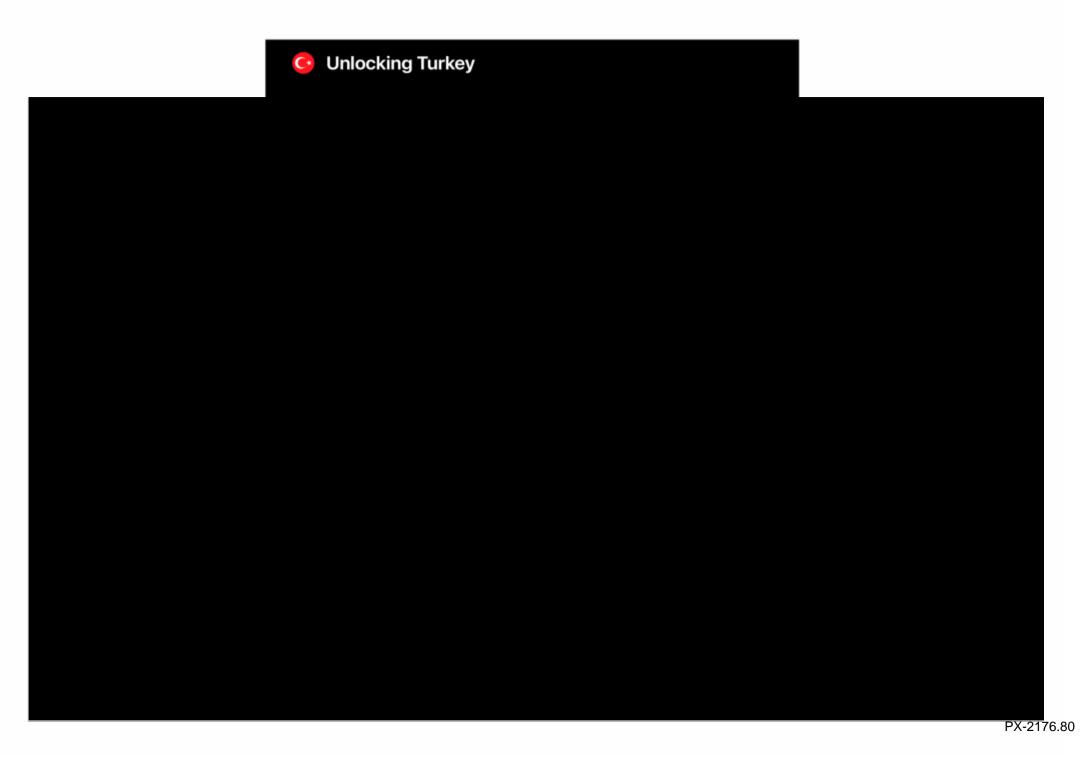




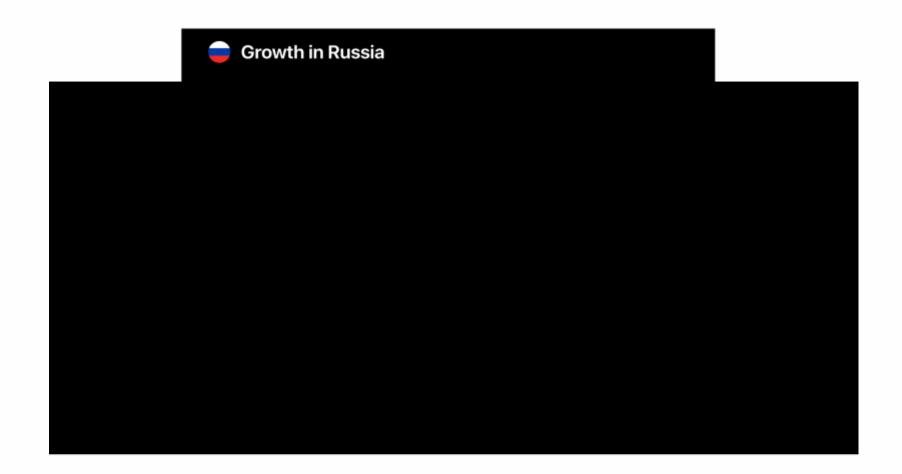
Apple Games Subscription Service Customer Engagement International Expansion Commerce Breakout Hits Enhanced Analytics



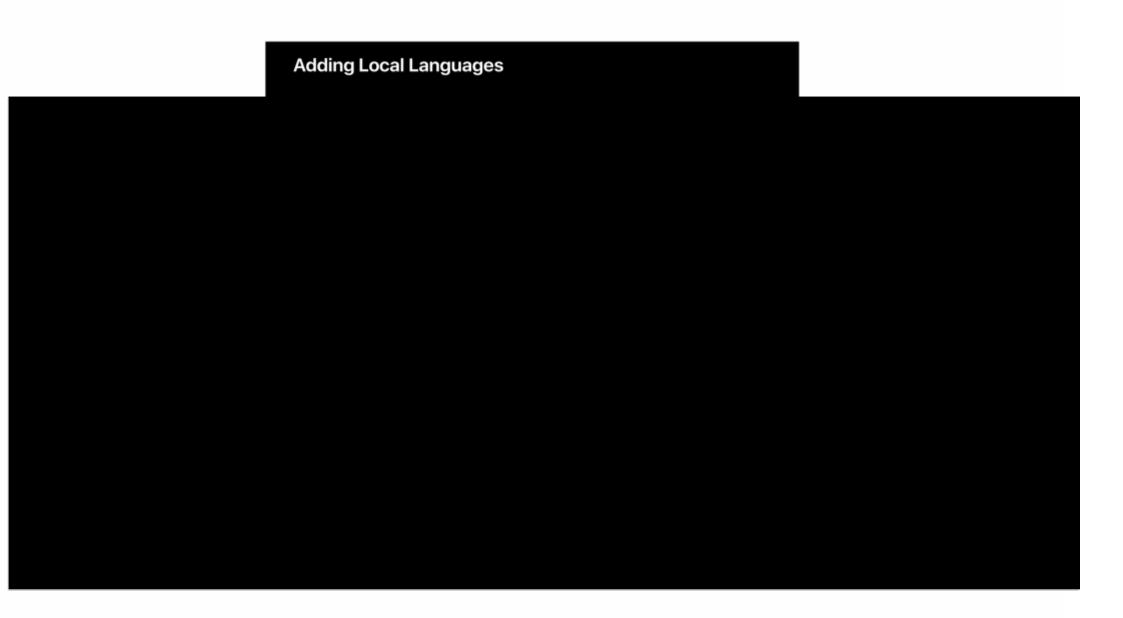




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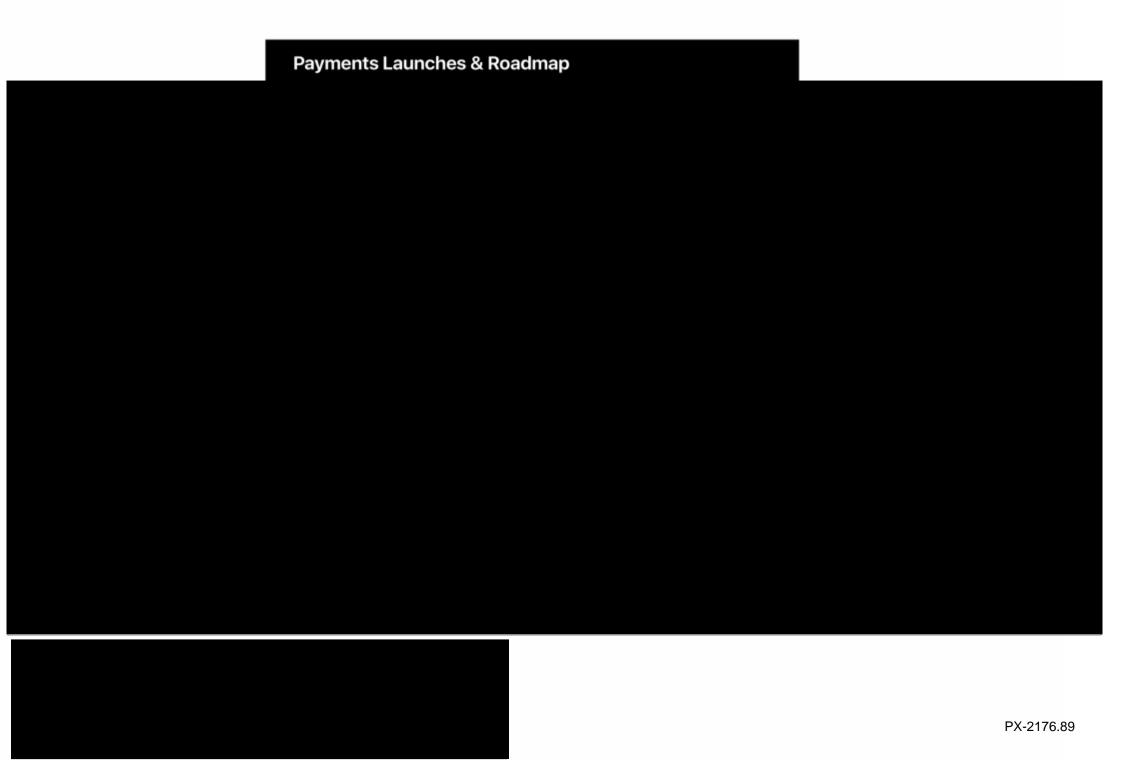


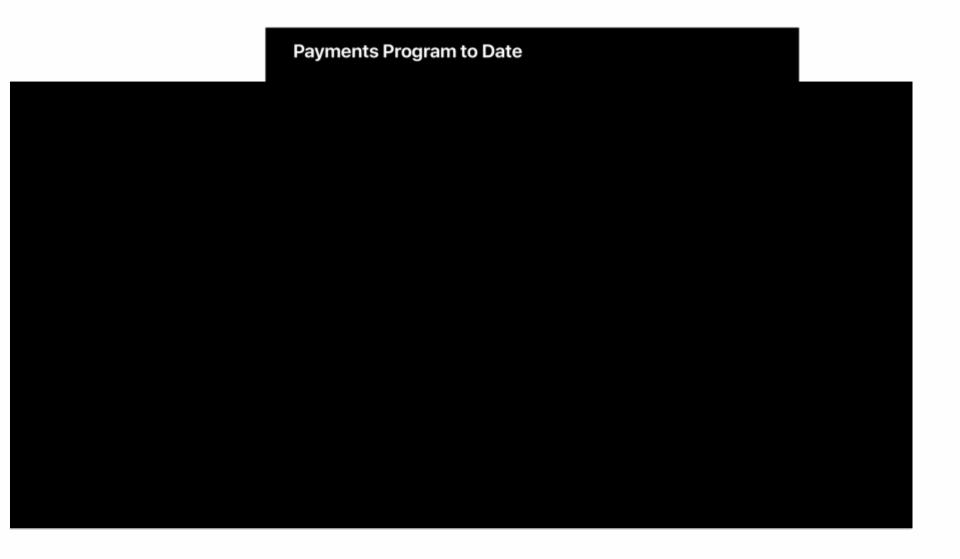


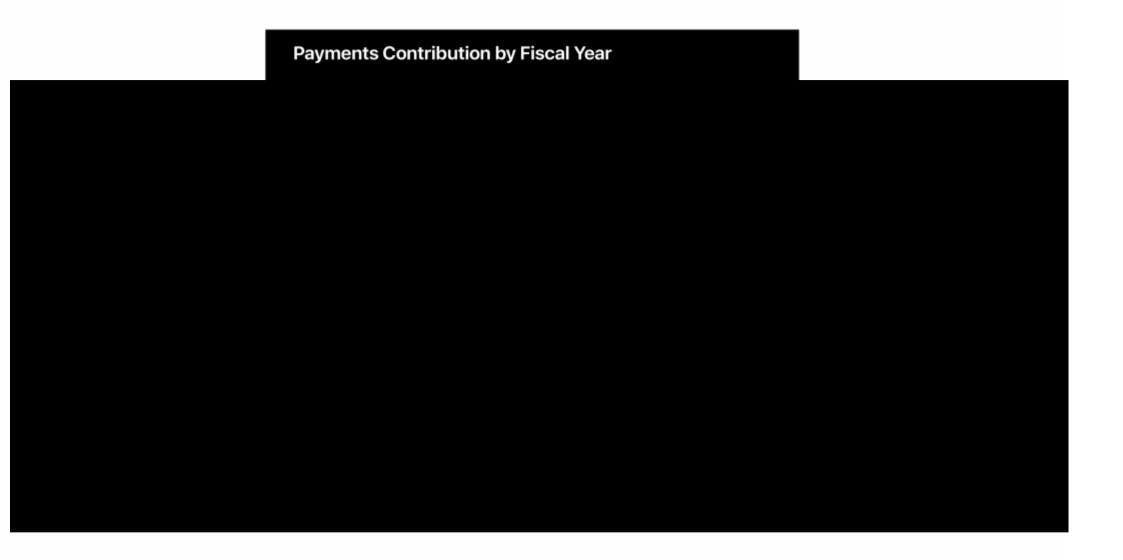
Countries we can reach in local language with additional resources We are curating main

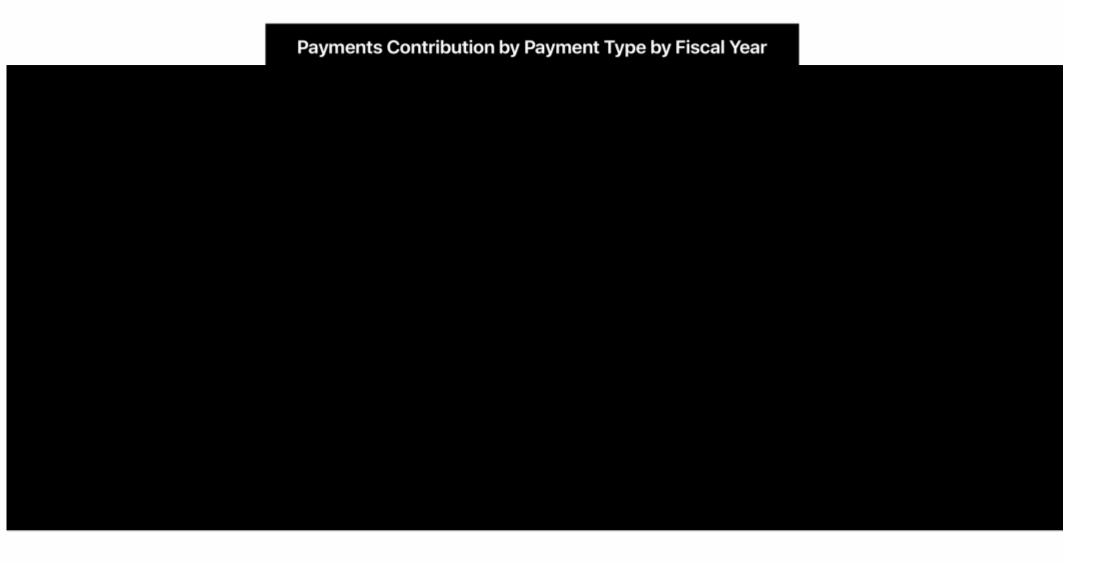
Apple Games Subscription Service Customer Engagement International Expansion Commerce Breakout Hits Enhanced Analytics

Growth Apple Games Subscription Service Customer Engagement International Expansion Commerce Breakout Hits Enhanced Analytics

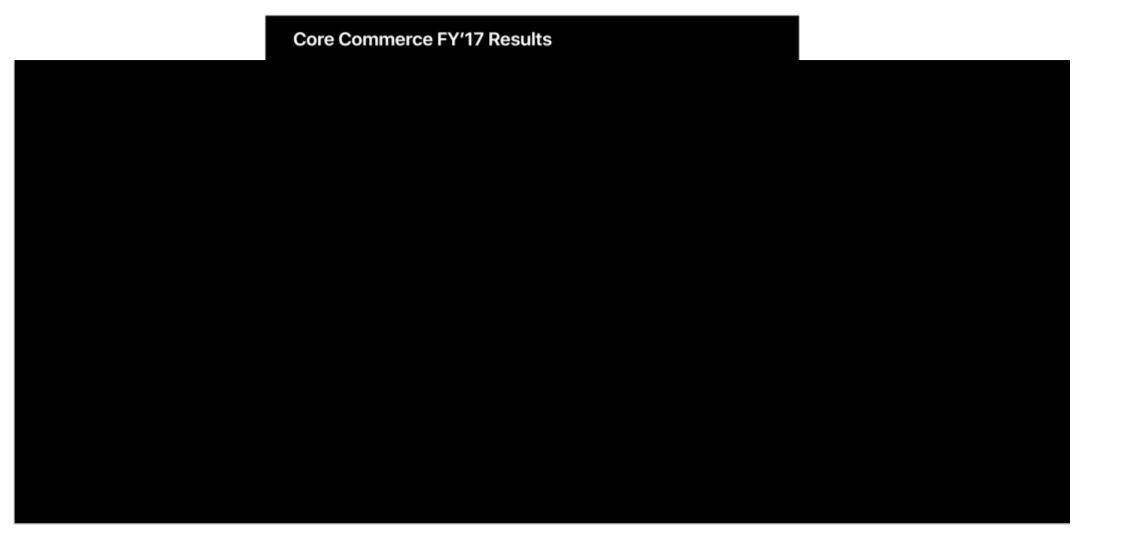


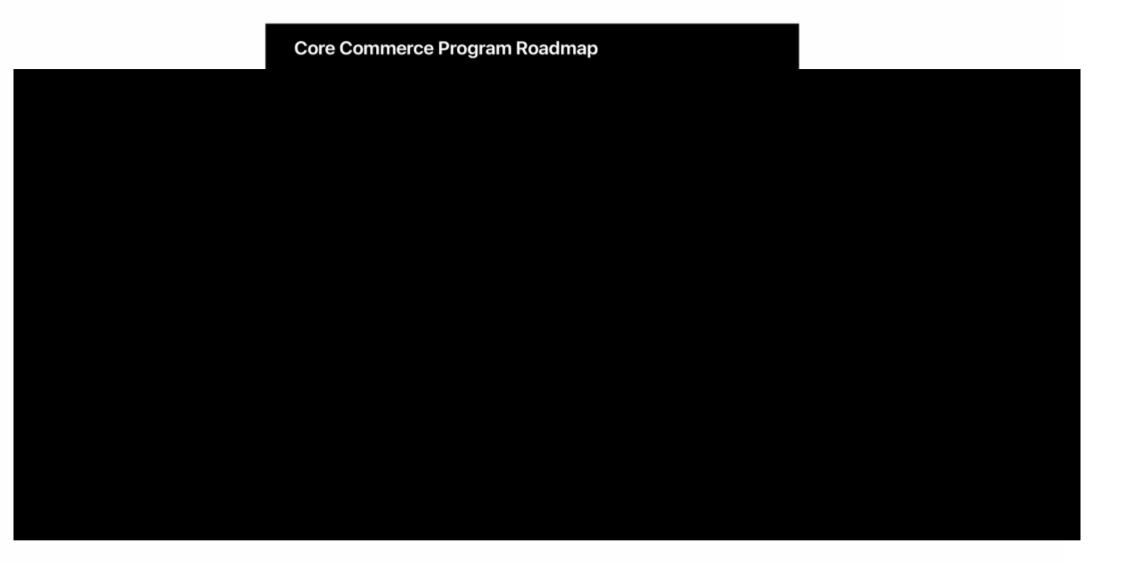


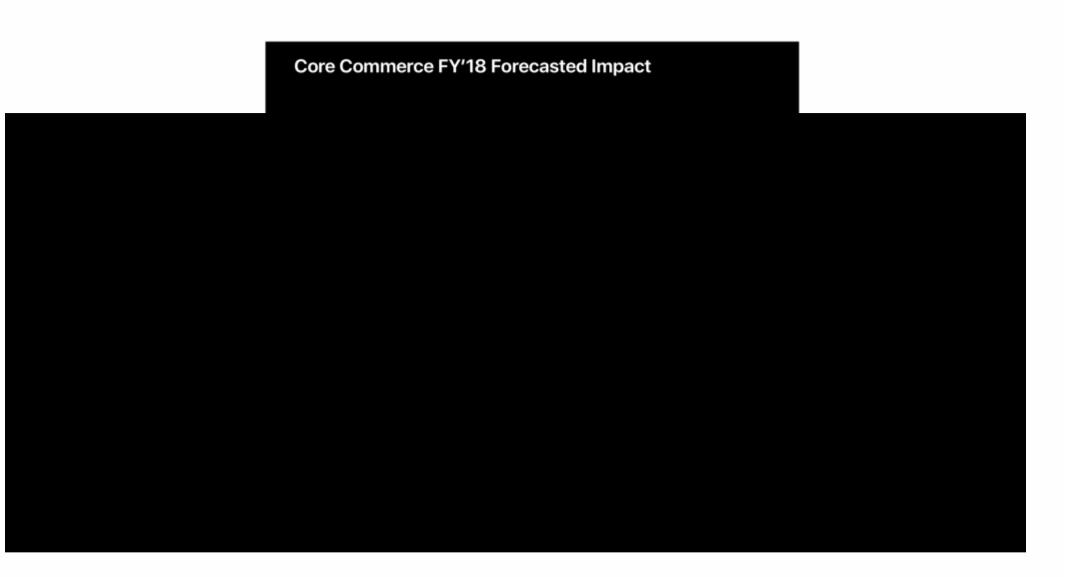






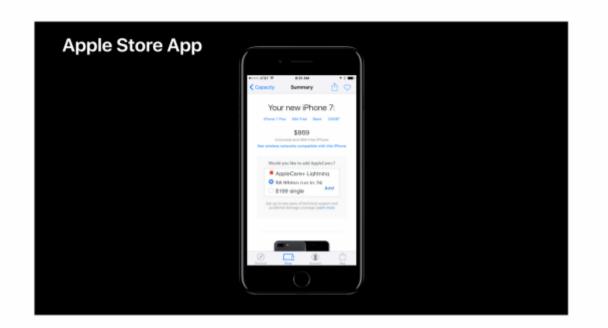


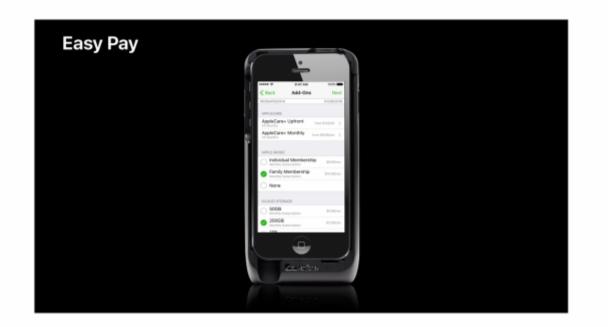




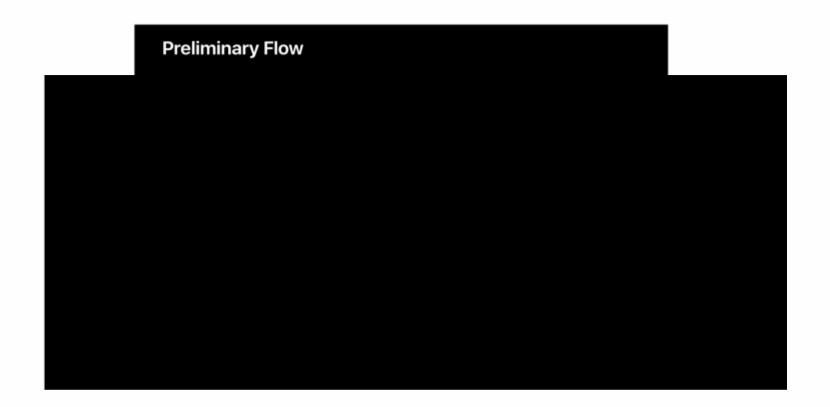












Growth Apple Games Subscription Service Customer Engagement International Expansion Commerce Breakout Hits Enhanced Analytics

Growth

Apple Games Subscription Service

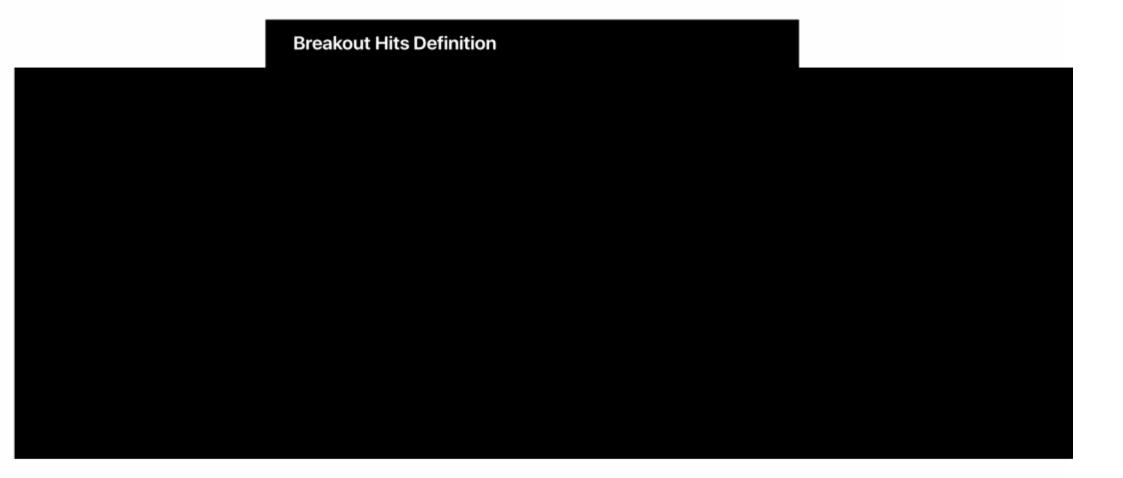
Customer Engagement

International Expansion

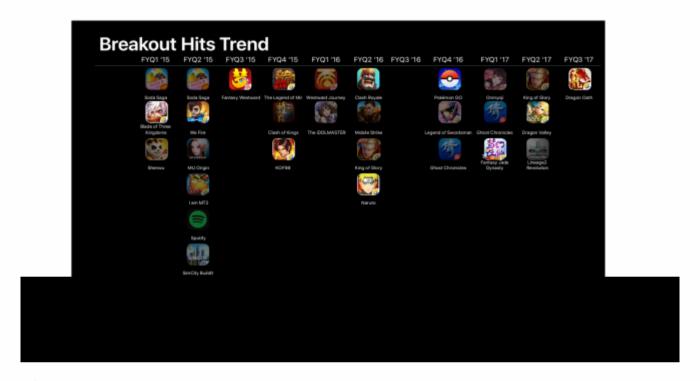
Commerce

Breakout Hits

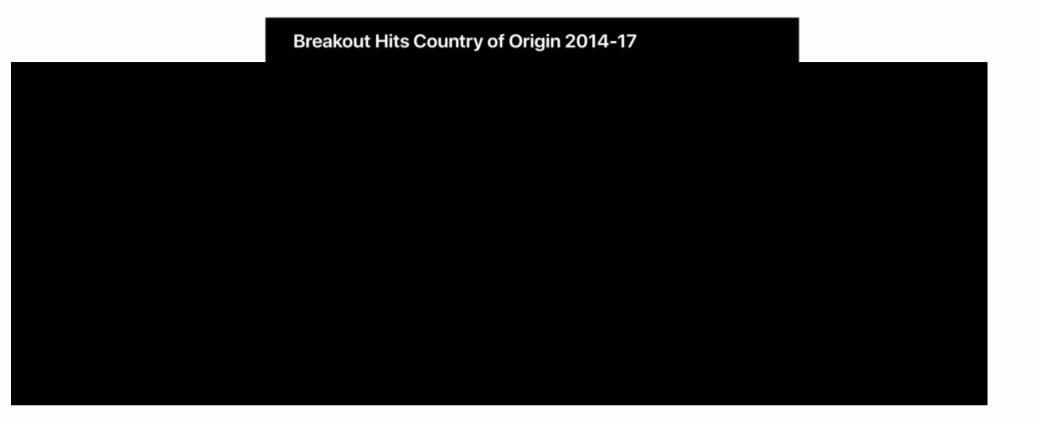
Enhanced Analytics



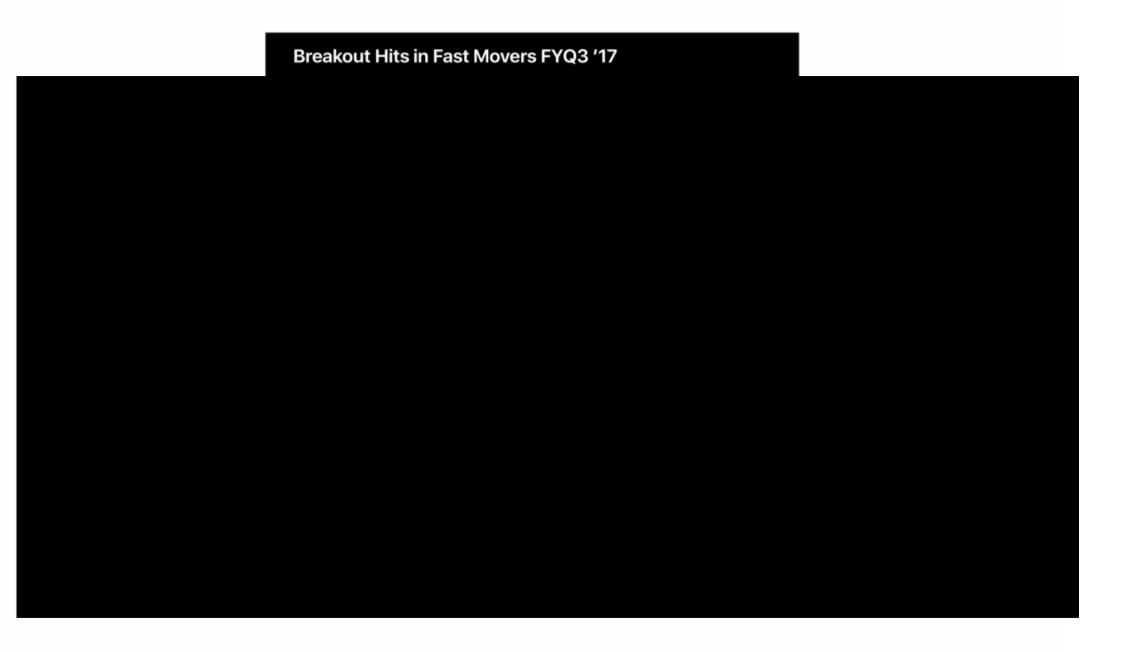


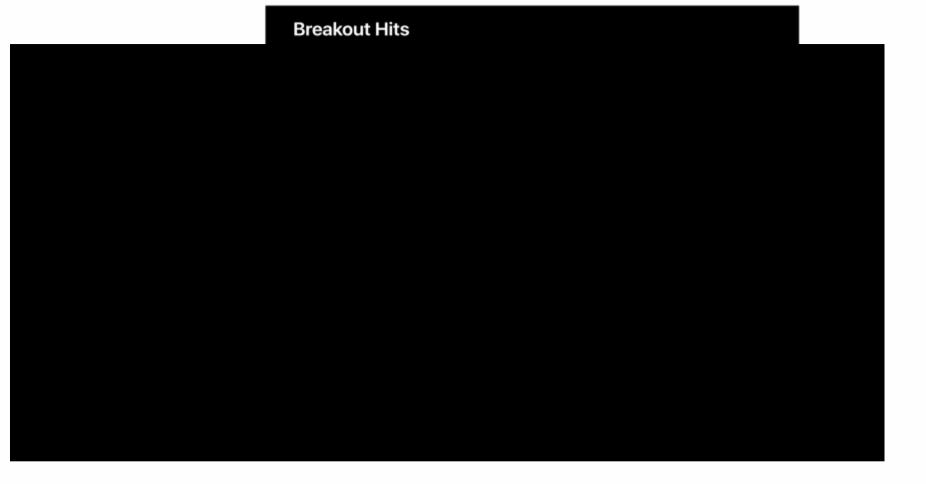


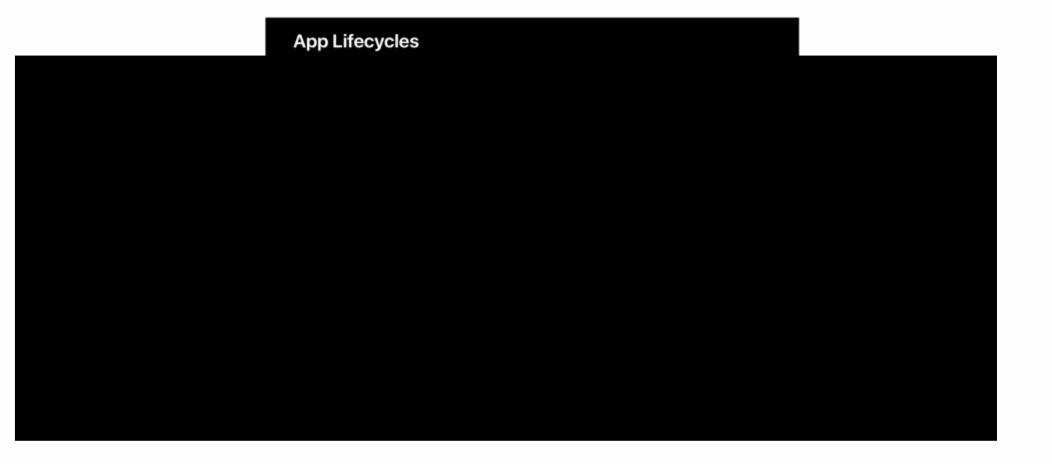
Highlighted if new in same quarter

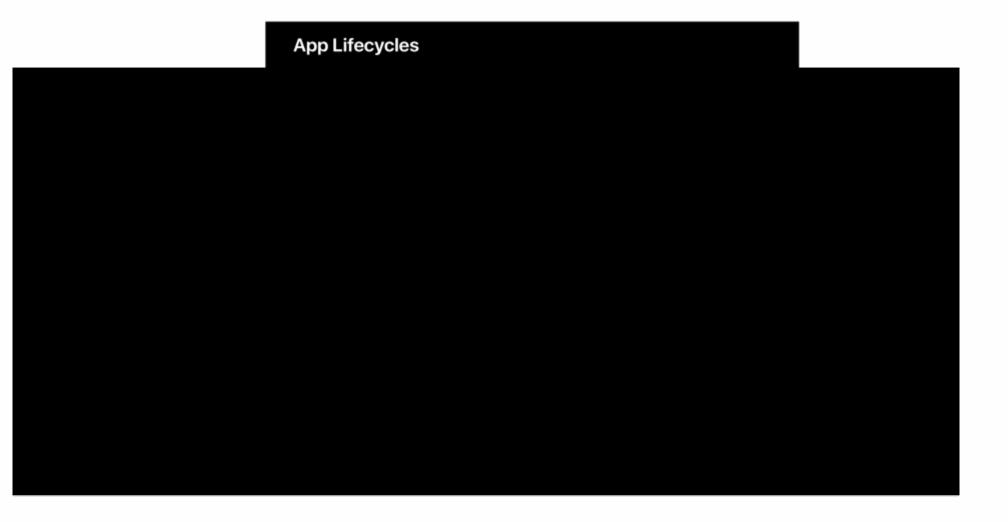


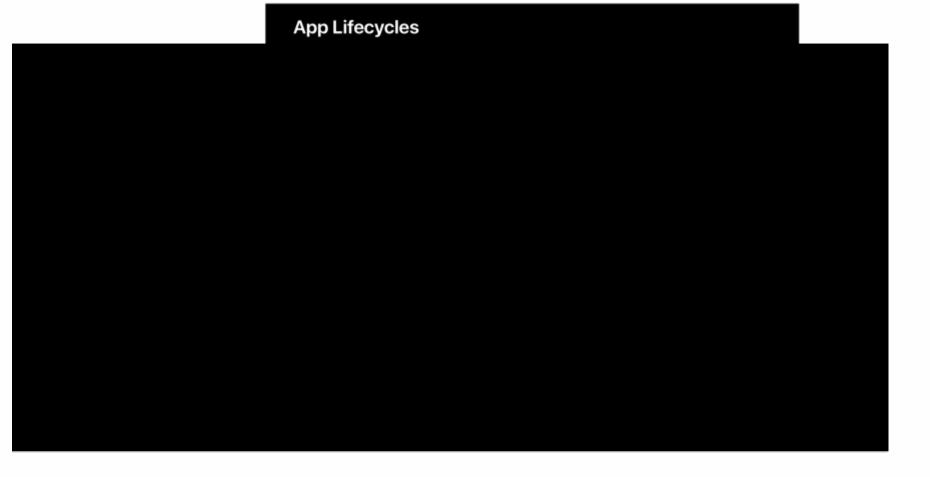
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Lineage2 Revolution				Korea	Korea	Taiwan Hong Kong Thalland Singapore
King of Glary	China			Taiwan	China Taiwan Hong Kong Thailand	Thailand
Onmyoji			China	China Canada Australia UK	Taiwan Hong Kong	
Ghost Chronicles		China	China	China	Taiwan	
egend of Swordsman		China	China	Taiwan Hong Kong		

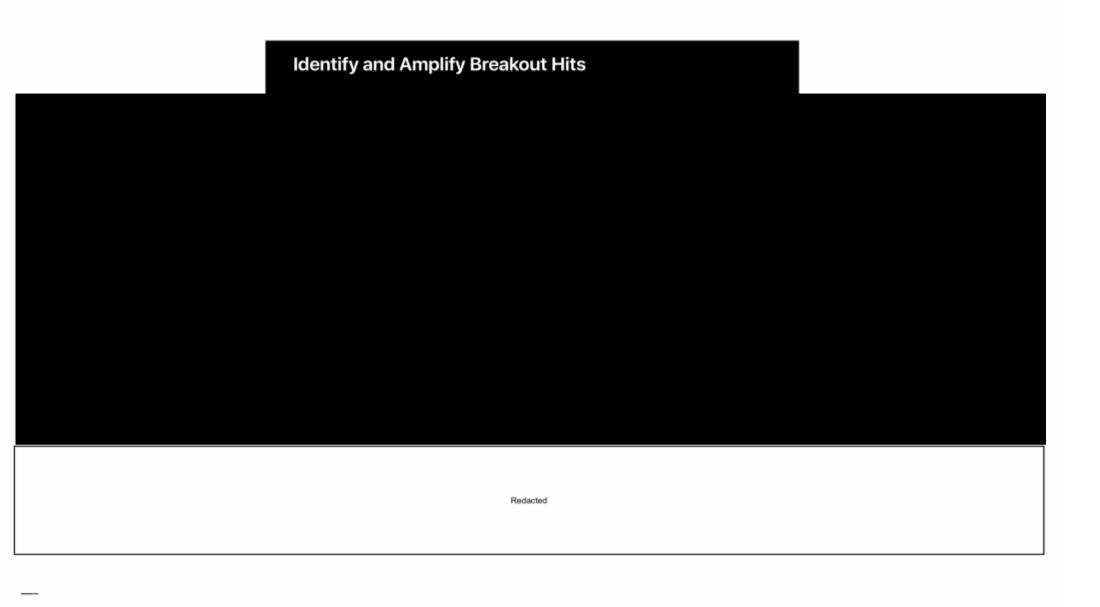


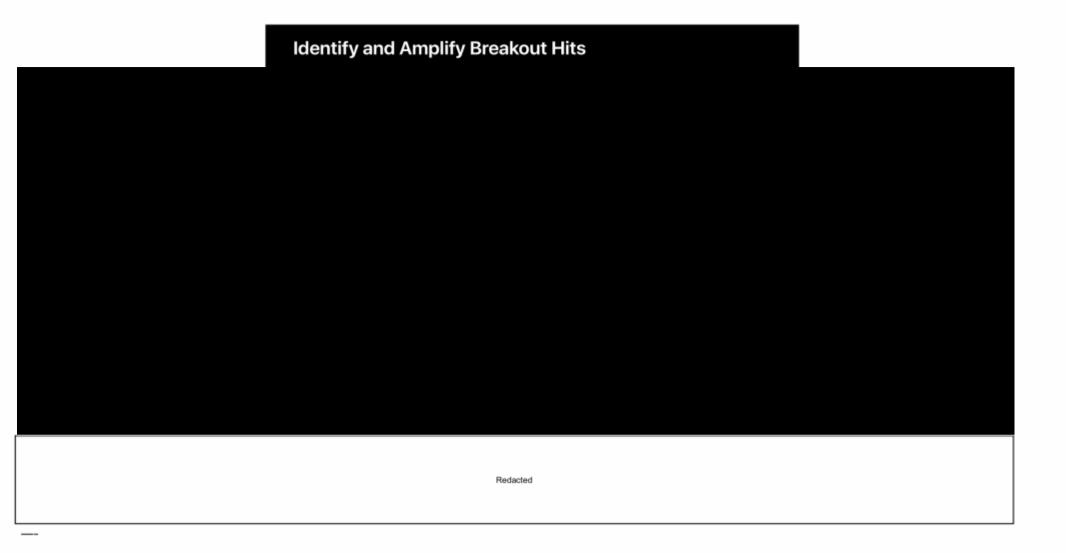


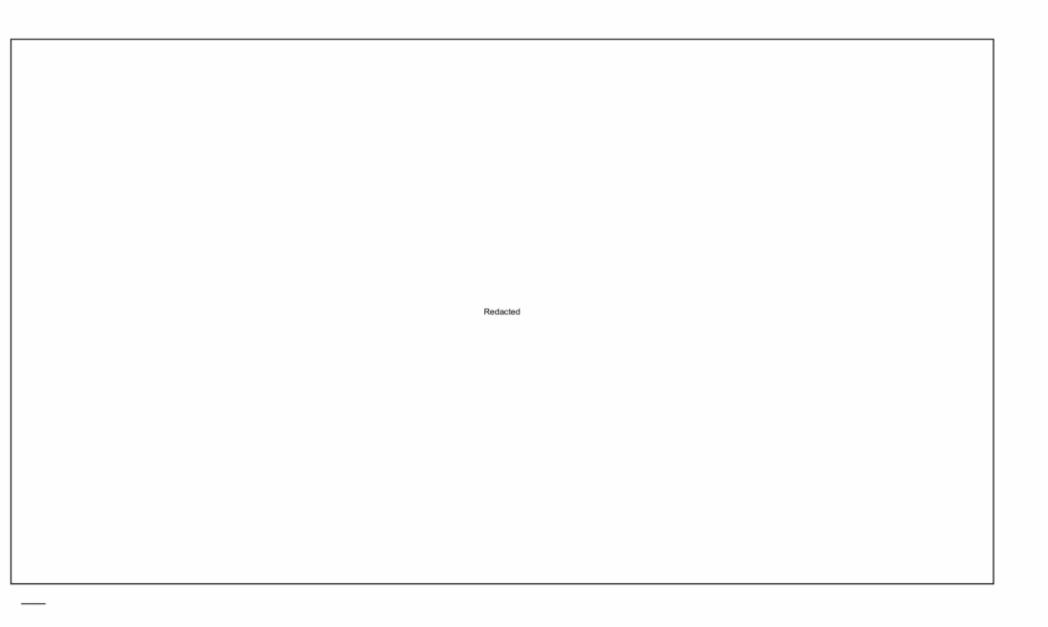




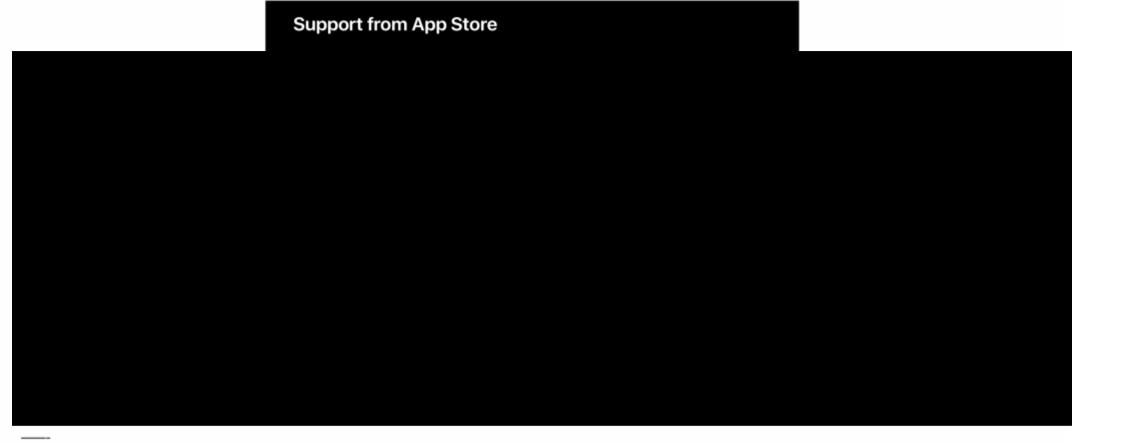


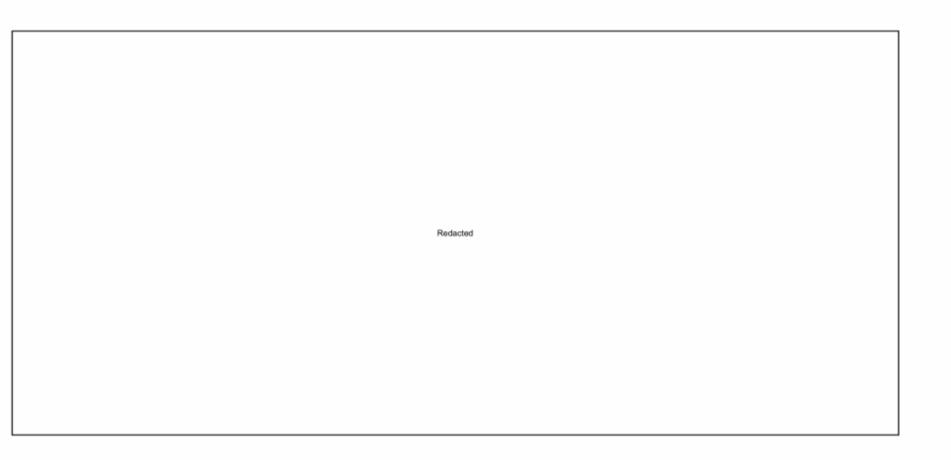


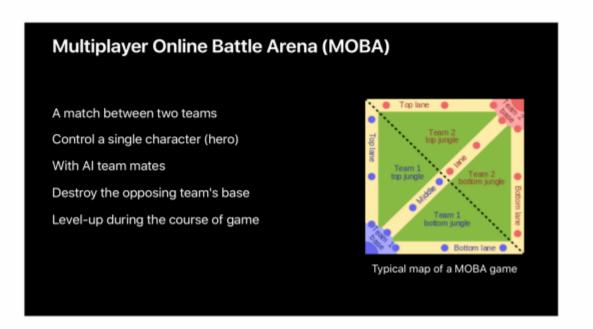




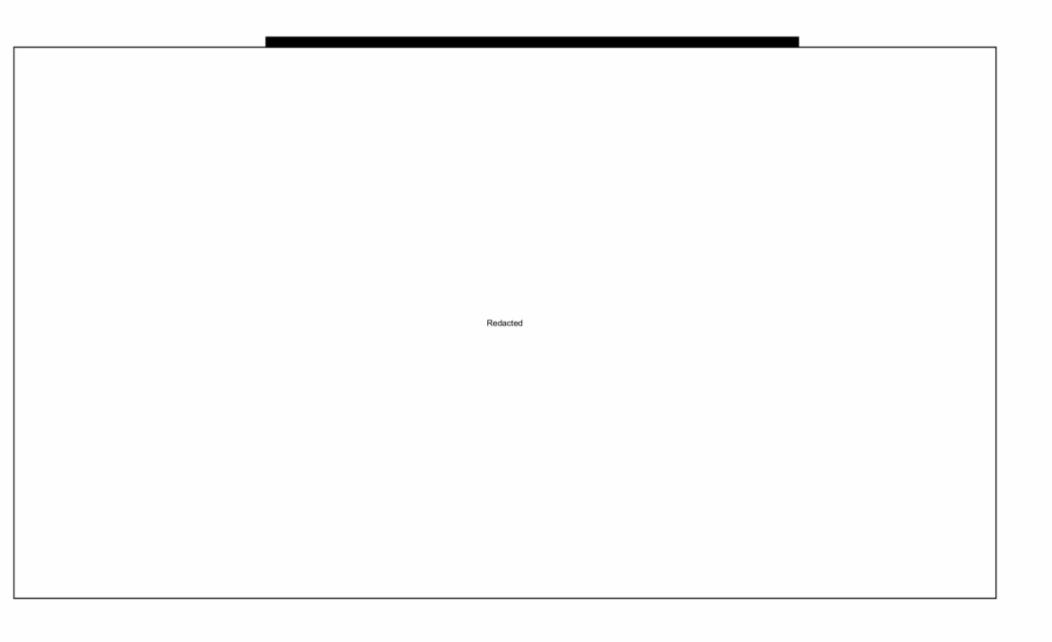








- Teamwork and cooperation
- Choosing from dozens of heroes that have different and unique abilities
- Killing units and heroes to gain points to level up and golds to buy gears to strengthen its abilities
- With the assistance of Al units, which are marching along the three lanes
- · Final objective is to destroy enemy's base structure



Growth

Apple Games Subscription Service

Customer Engagement

International Expansion

Commerce

Breakout Hits

Enhanced Analytics

Apple Games Subscription Service Customer Engagement International Expansion Commerce Breakout Hits Enhanced Analytics

A lot of the initiatives we have covered today rely on data and analytics to succeed, so we want to quickly share how we plan to enhance our capabilities in those areas to support these initiatives ... and more.



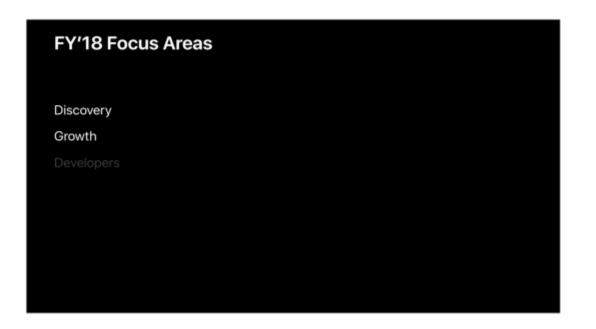




We've already started down this path through a pilot project that goes live with the redesign in September







[Handoff to Ann]



-App Store's success depends on the success of its developers

<CLICK>

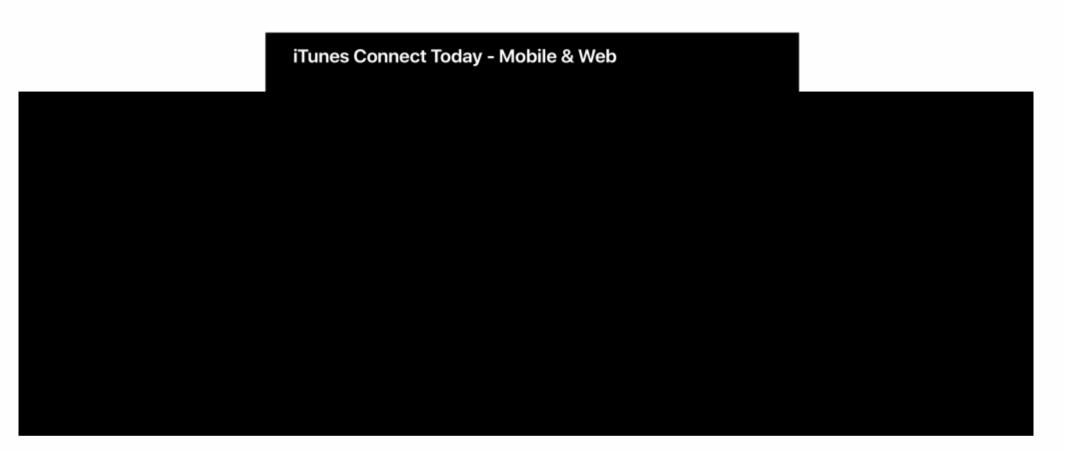


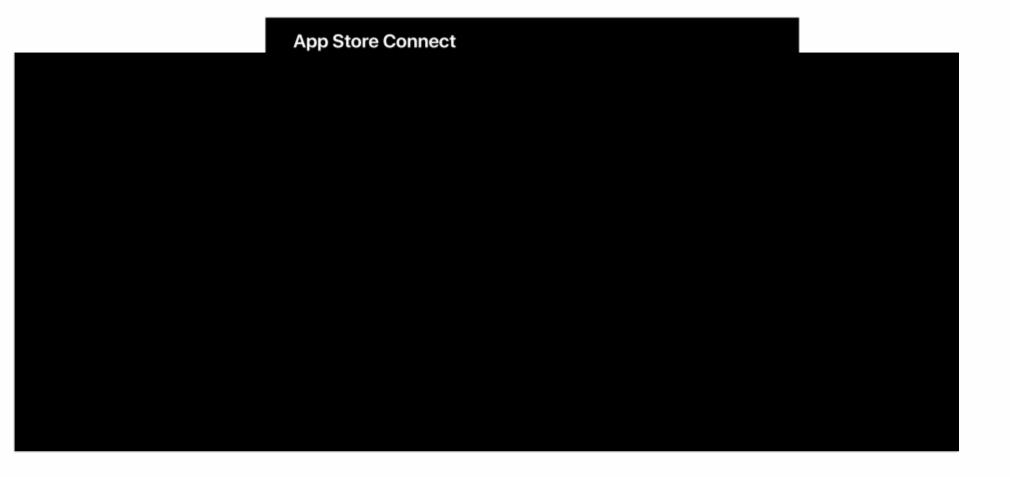
-Doing a lot for developers next year, 3 things that stand out

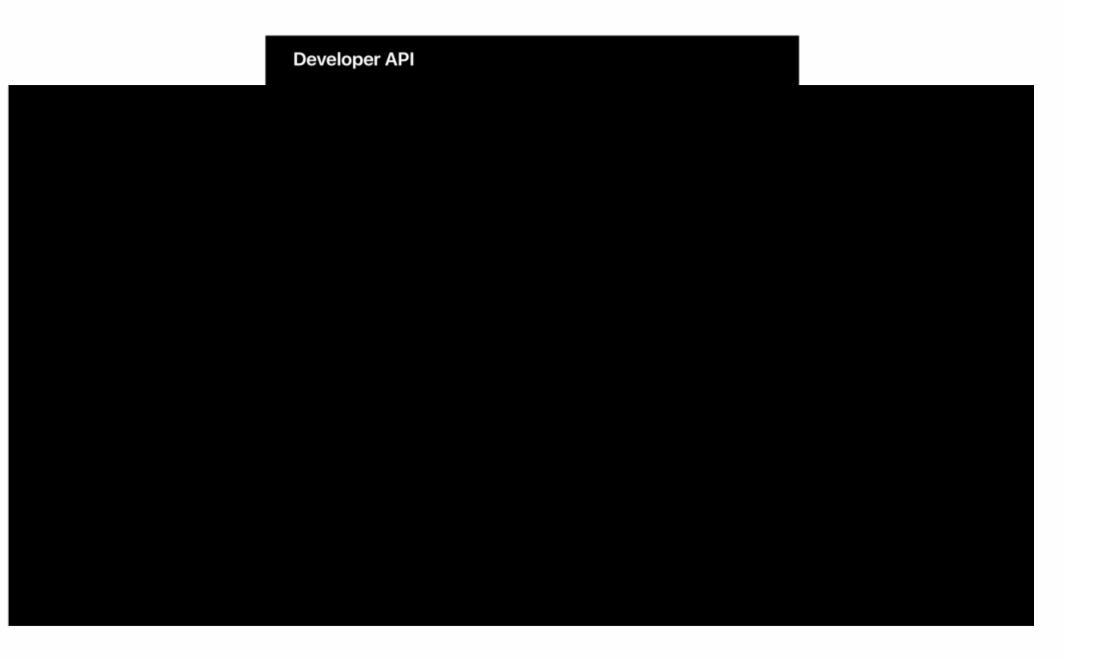
Redacte

-Improve overall developer experience on our platform with App Store Connect & Developer API



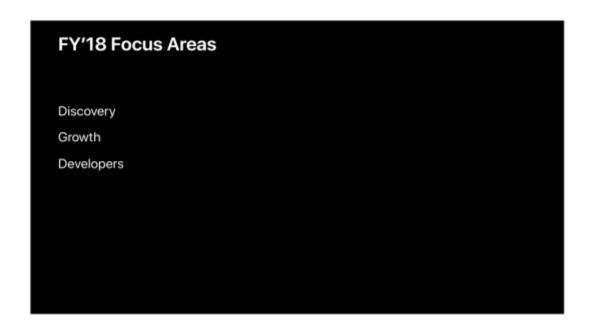


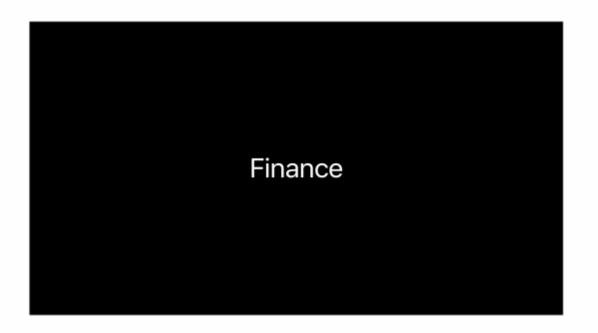




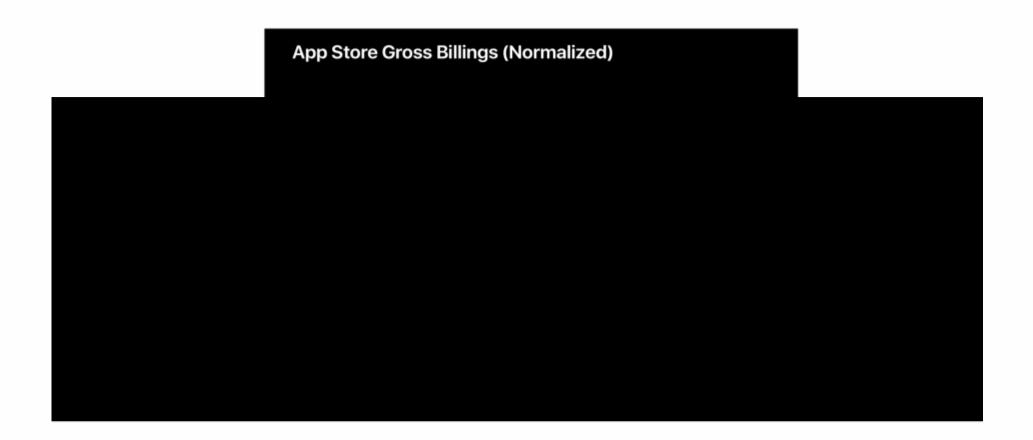








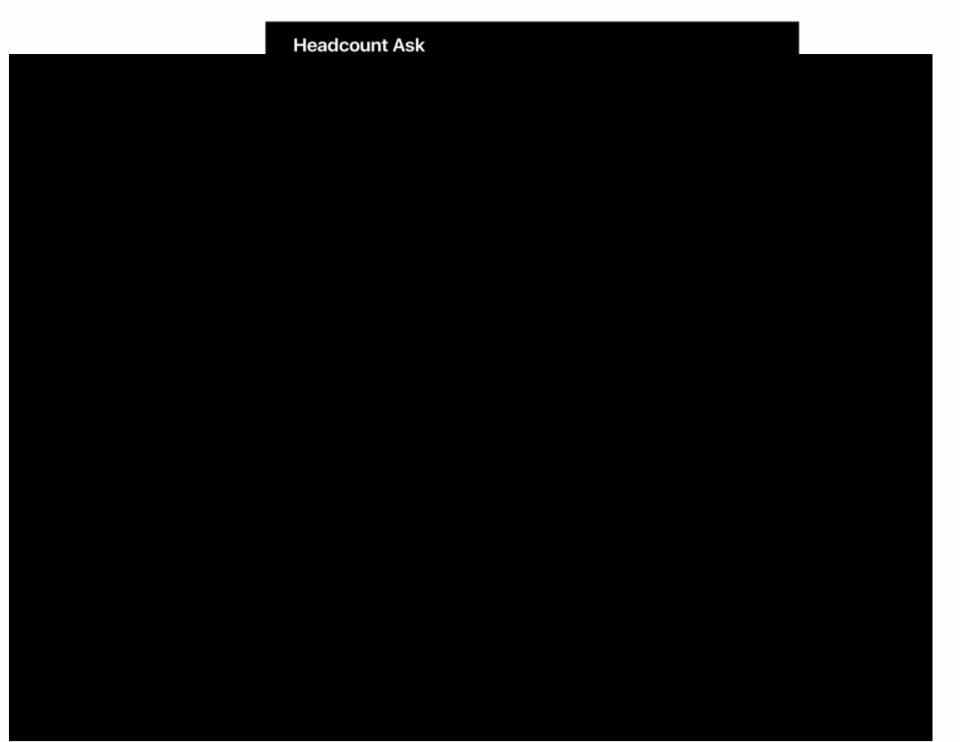
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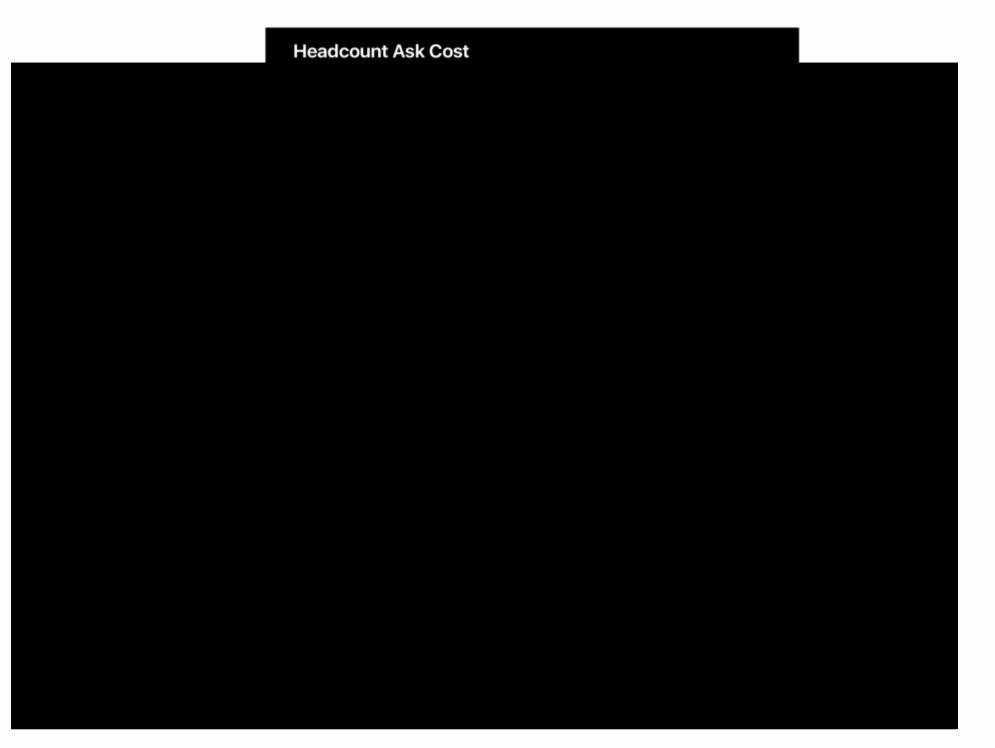




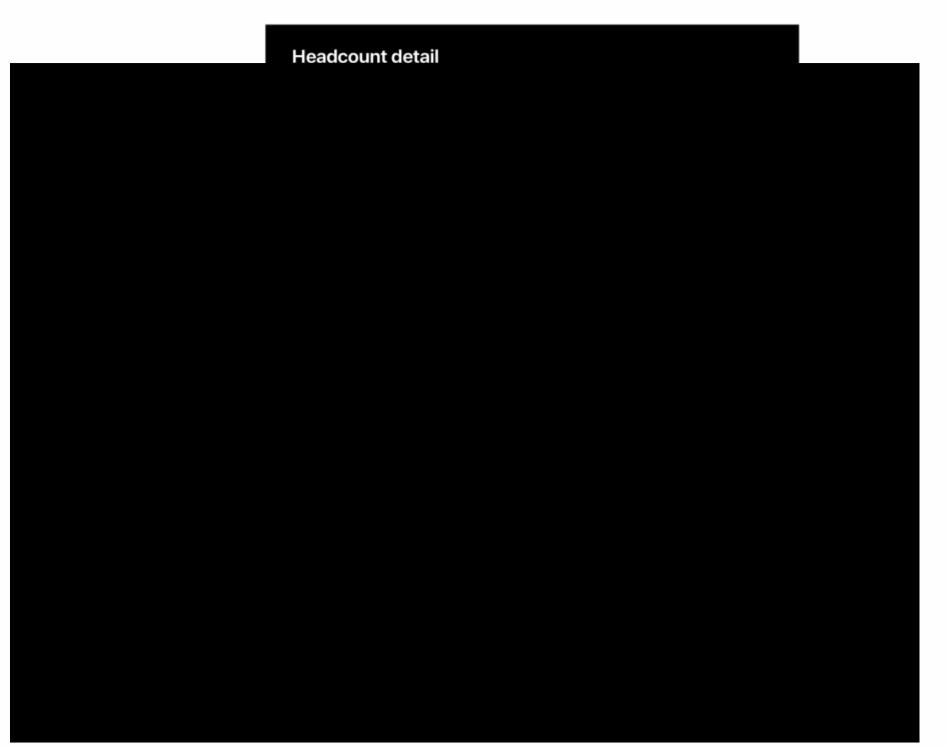


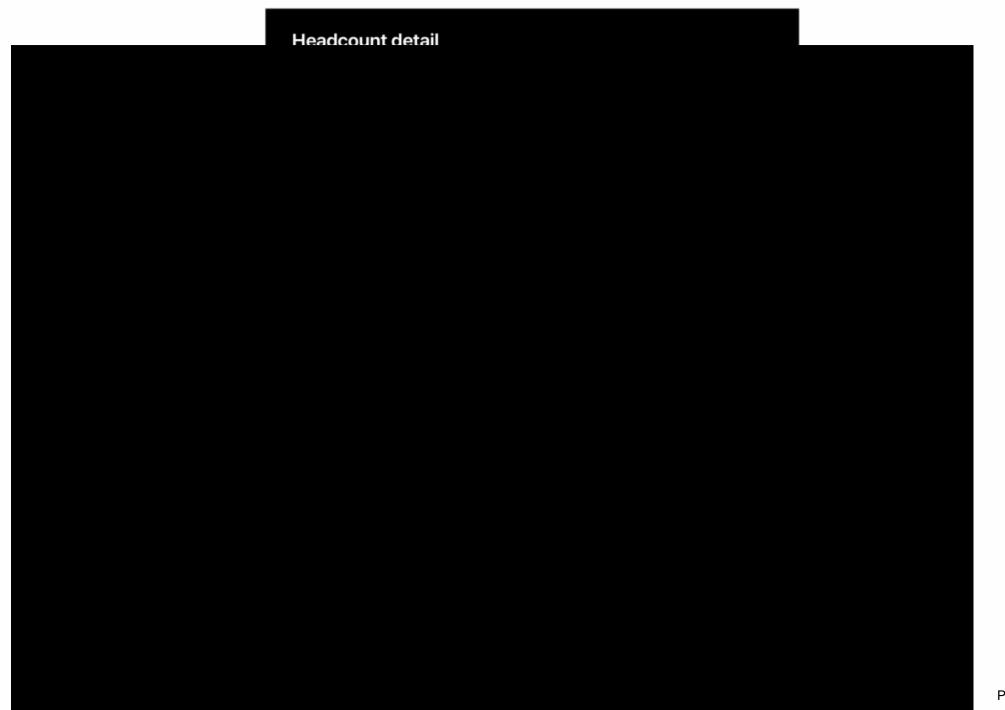


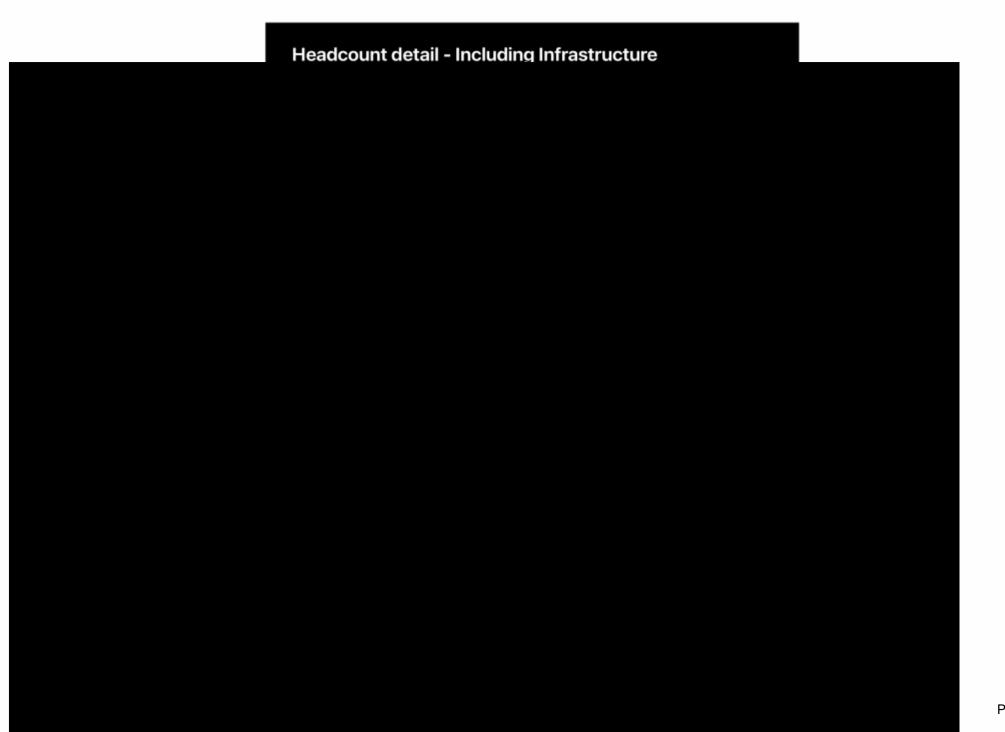


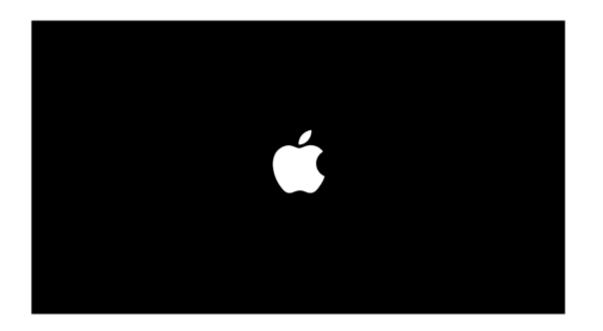


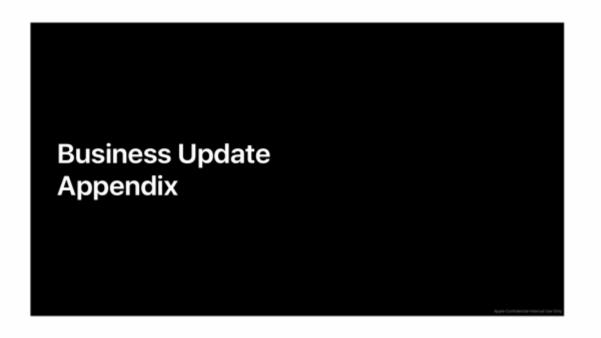


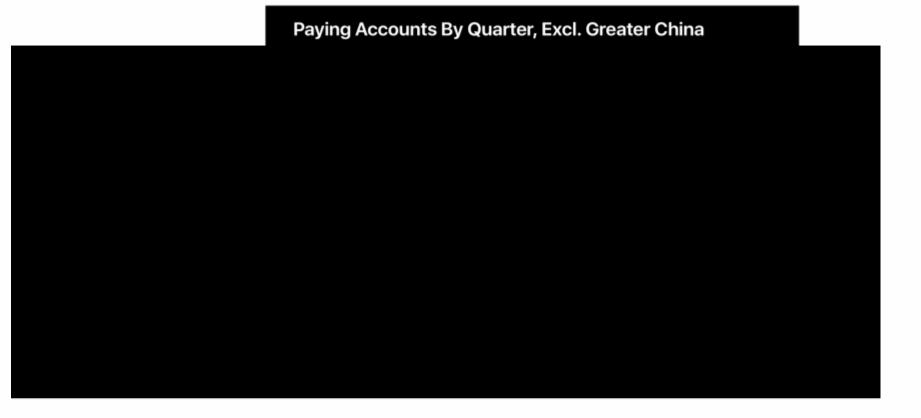






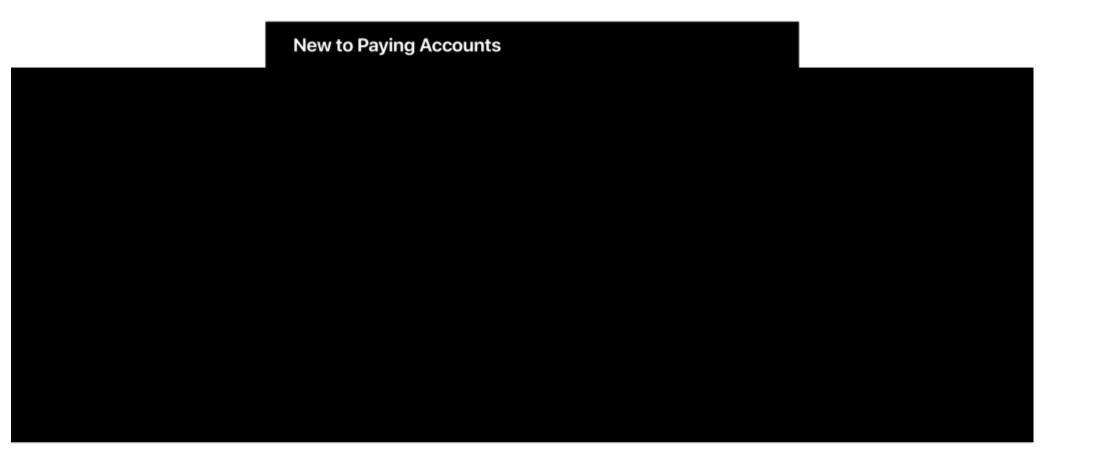






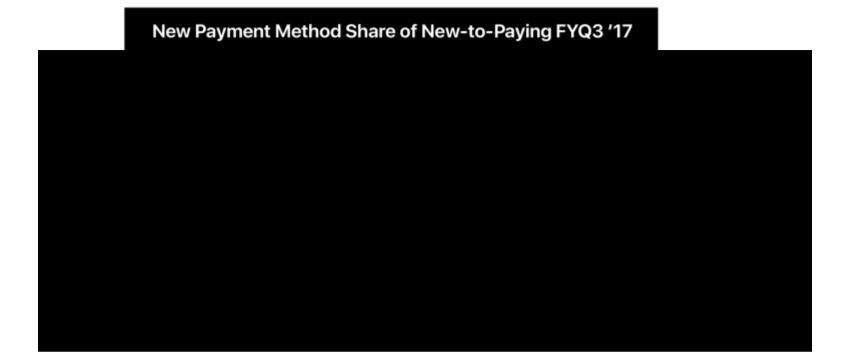


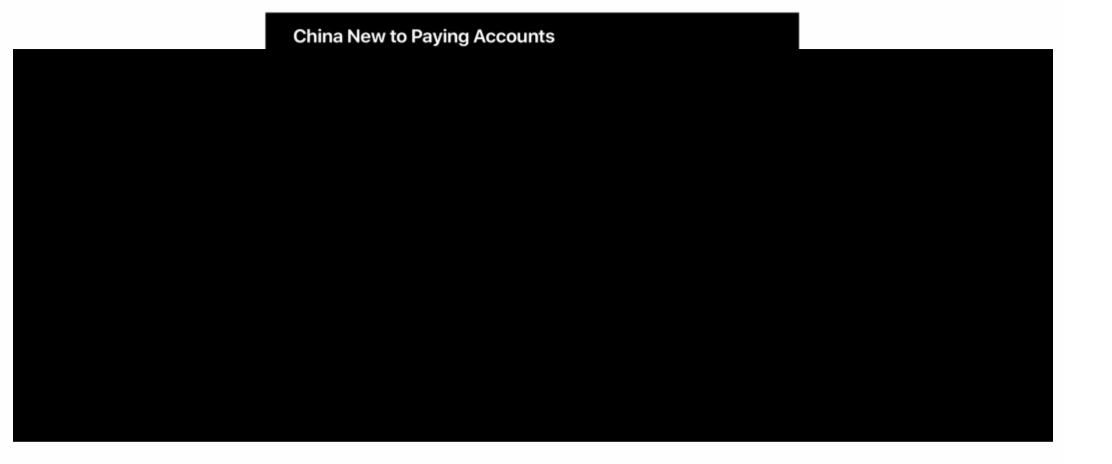










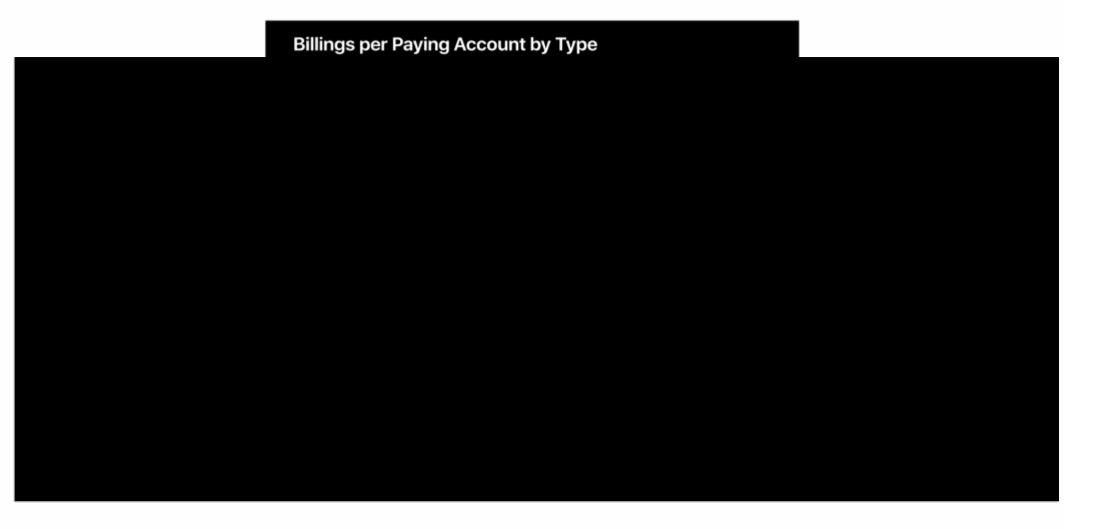












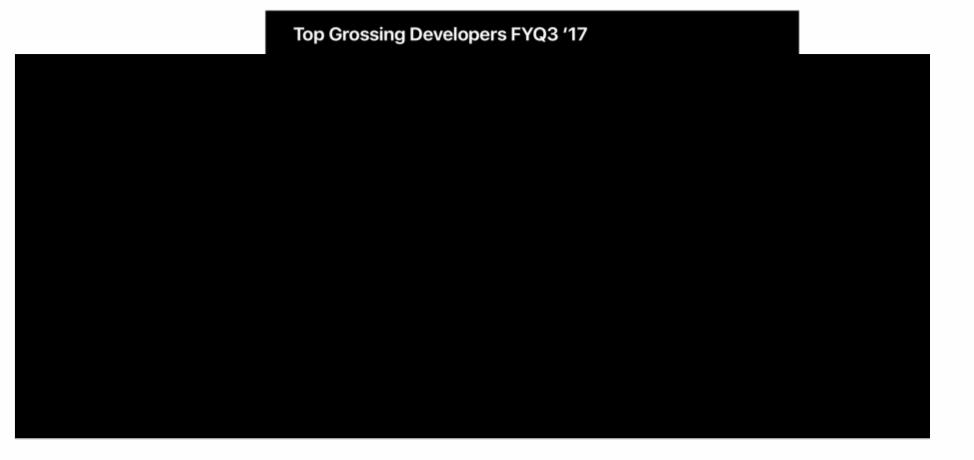








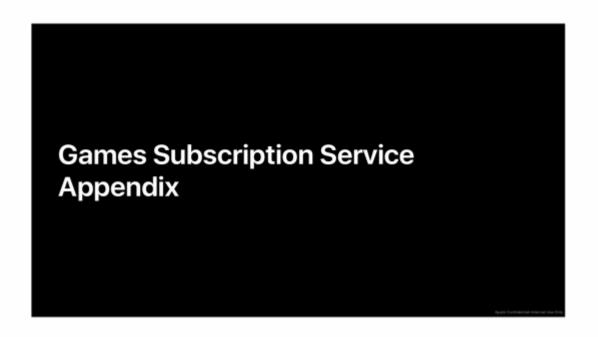
- · % of weekly devices
- Median Foreground Time Spent per Device (Minutes per Day)





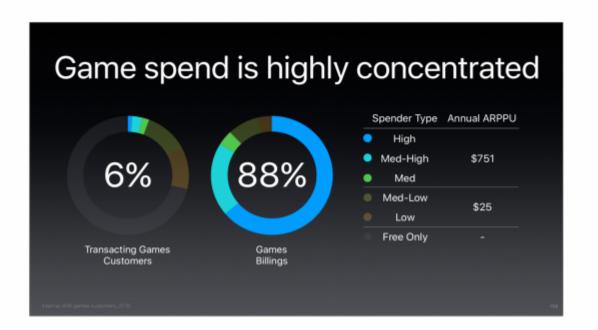








Before we go any further, let's take a look at the relationship of our proposed service to our existing games business, which we know is important to Apple.



- · This brings us to the meat of the discussion, which is our analysis of cannibalization.
- Of the 481M games customers that spent on the store last year, 6% generated more than 88% of the total App Store billings. This means the average user in this 6% spent over \$750 a year on games.
- . (On the other hand, the remaining 111M spending customers spent an average of \$23 a year on games, showcasing the massive opportunity for a subscription offering that would generate over \$70 per subscriber each year.)
- . When considering the risk of cannibalization, we need to primarily consider how this service would impact the engagement and spend of this 6%.

Spend Segment ARPPU

- High:
- Med-High
- Med:
- Med-Low:
- Low:

Note: 481M games transacting customers is based on the 2015 number because the 2016 contains significant fraud issues.

These 6% seek three experiences

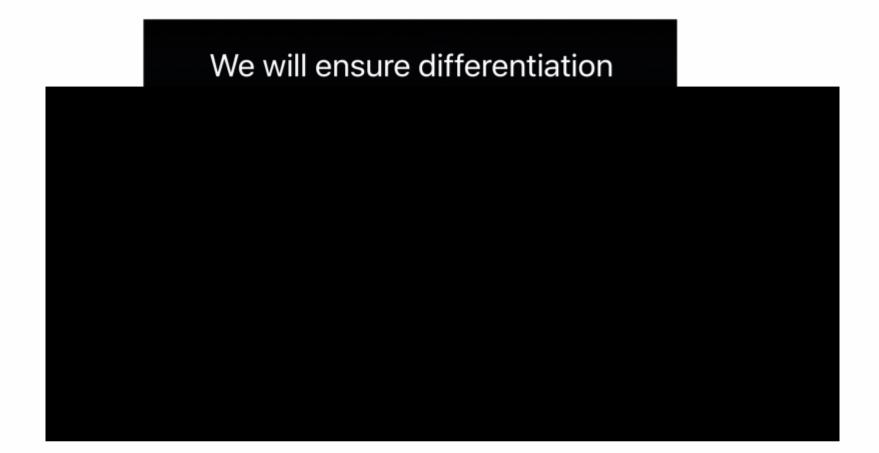
- 1. Deep, continuously expanding gameplay
- 2. Building community
- 3. Accumulating and protecting elite status

"Why do players buy in-game content? An empirical study on concrete purchase motivations." Computers in Human Behavior 68 (2017)

- Freemium games offer the ideal playing experience for this small segment of high spending customers.
- Freemium games offer these players deep and continuously expanding gameplay and allowing these users to spend years playing in the same game without losing interest. Freemium developers also leverage limited time events, like tournaments, to inspire competition and encourage players to stay heavily engaged.
- Freemium games allow users to establish anonymous personas (or avatars) within the game and build deep in-game communities through these personas. Within most freemium games, community integration and support is essential to competing at the highest levels and this sense of community is a major factor in the high engagement and spend of the 6%.
- Freemium games also allow users to accumulate status within the community and game over the course of many years. Accumulating status in these games is a complex and time-intensive process, but that status can provide access to exclusive areas and communities, making it highly valued by the 6%. However, status is usually difficult to maintain in live service games, so elite players will readily spend to protect their status.

Subscription won't satisfy the 6%			
Spend motivations	Features	Freemium	Subscription
Deep, continuously expanding gameplay	Rich world with endless gameplay	\odot	\otimes
	Limited time/special events	\odot	
Building community	In-game persona/avatar	\odot	
	Gifting and community support		
	High value of cooperation		
	Anonymous multiplayer		
Accumulating and protecting elite status	Difficult to maintain status		

- Here is a list of features which are essential to the high spender experience in freemium games that will not be available in the games subscription service.
- Freemium games provide never-ending gameplay for users, allowing for deep and limitless play. All the games in the subscription service would all be winnable or time-limited, meaning that users beat them and move on to the next title.
- Freemium games use limited time events and offers to re-engage high value customers and encourage them to spend more. The games in the service wouldn't be able to offer in-app events or offers, allowing customers to play at their leisure.
- Freemium games allow users to create anonymous in-game personas/avatars and build deep communities with other anonymous players in the game. The subscription service wouldn't allow for in-game personas or anonymous multiplayer - players would leverage their real social graph via iMessage for social sharing, but the gameplay itself would be largely single player.
- Likewise, freemium games place a high value cooperation, gifting and support for members of the in-game communities. The games in the service would be largely single player, and any available multiplayer support would be focused on competition rather than cooperation and support.
- Freemium games make it difficult to maintain status within a game. The games in our service would focus on tangible in-game achievements such as tasks completed and levels won and these achievements wouldn't disappear or lose value over time.





Freemium developers agree

"[Hatch] is aimed solely at premium games with no IAPs, i.e., mainly games with gameplay types and genres that are not as well suited to free-to-play. So it's positioned more as an alternative discovery platform and source of income for (indie) premium game developers. As such, we don't see it having a big impact on our own business."

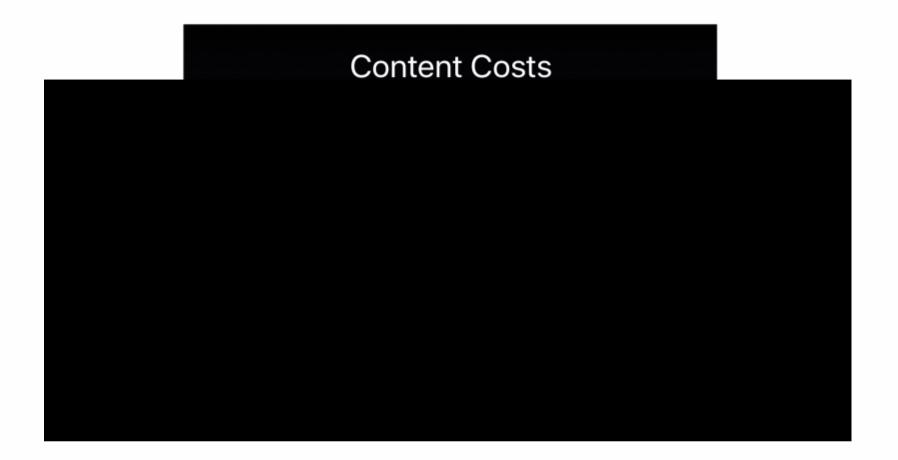
Ilkka Paananen, CEO, Supercell

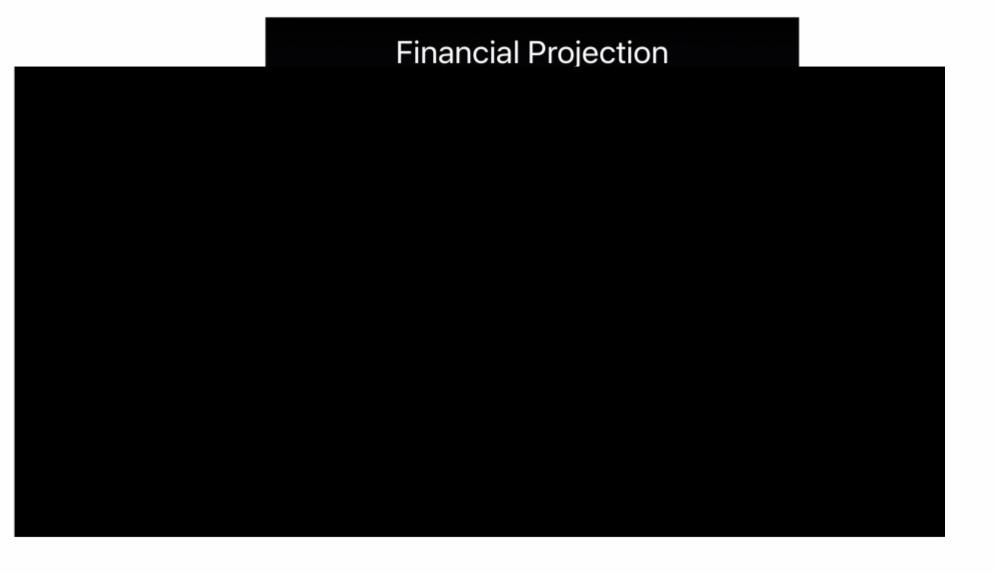


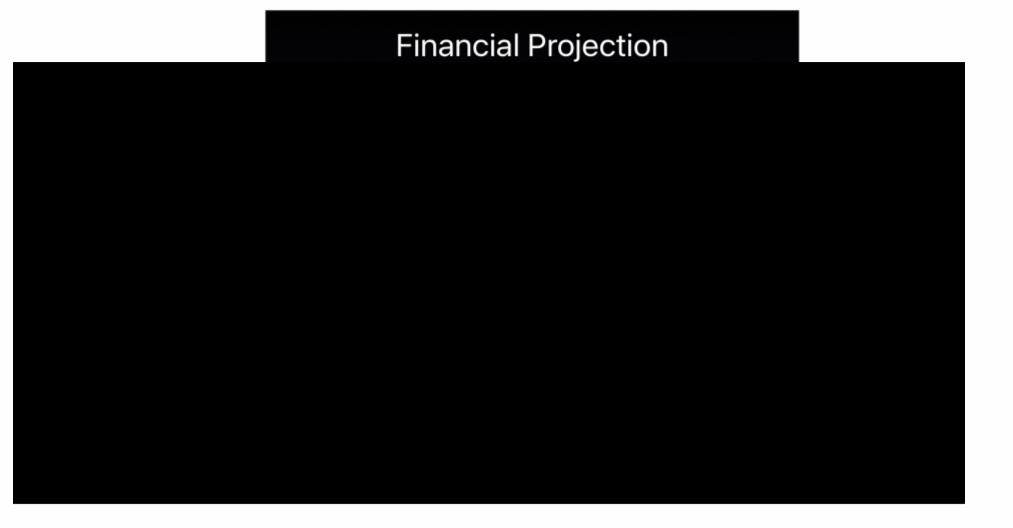


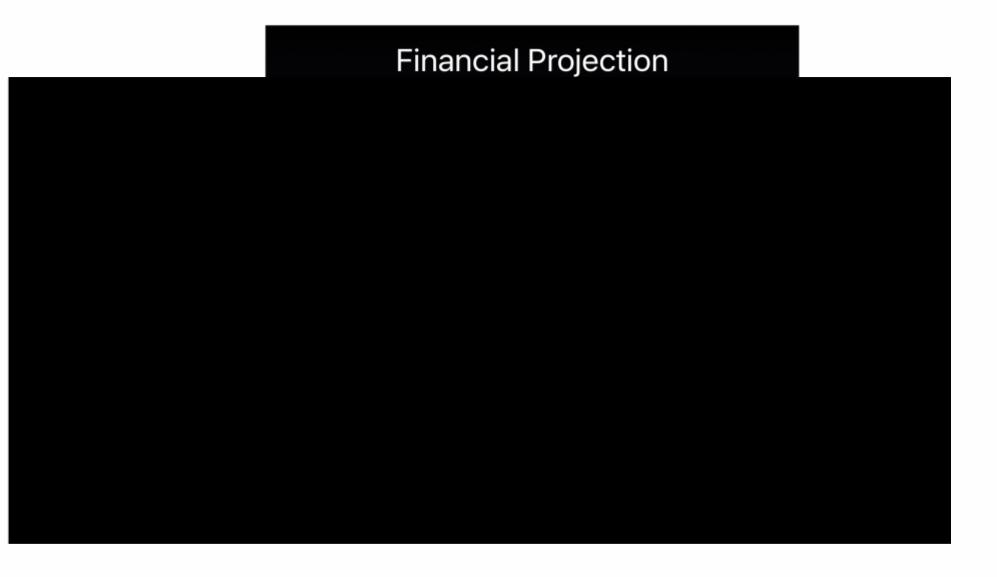


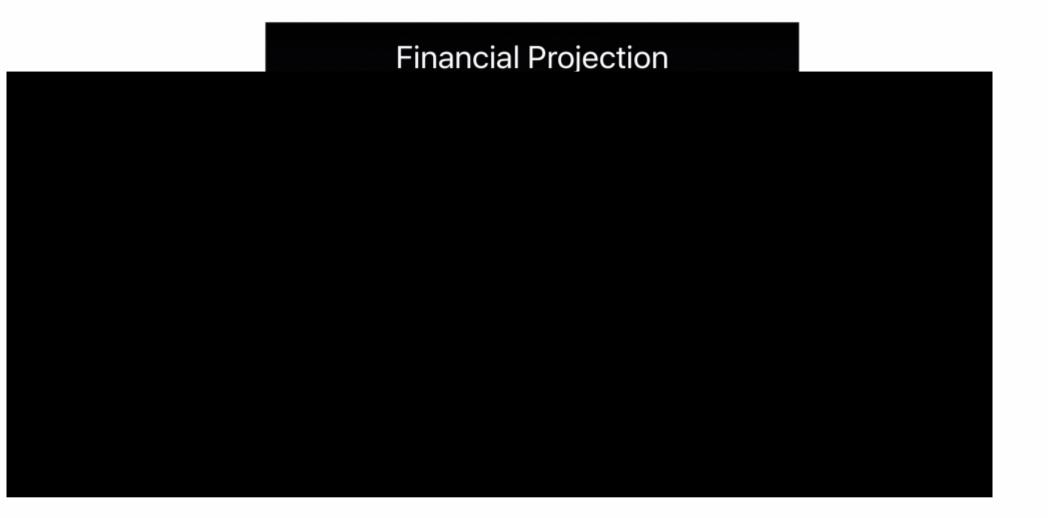


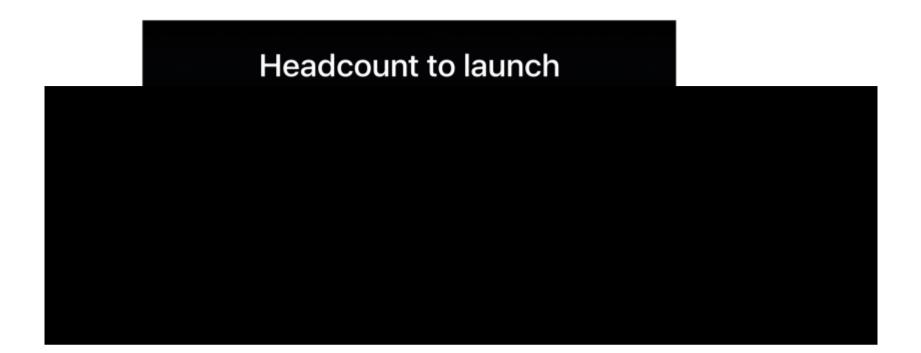








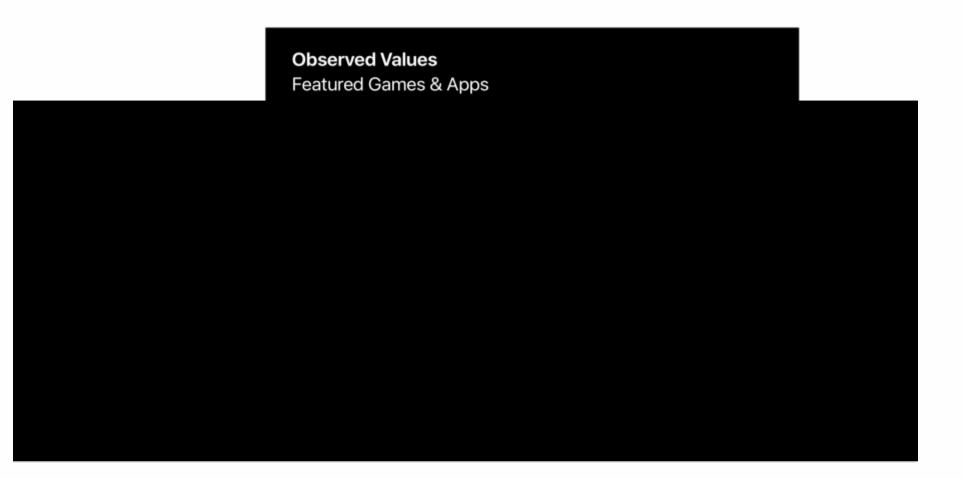


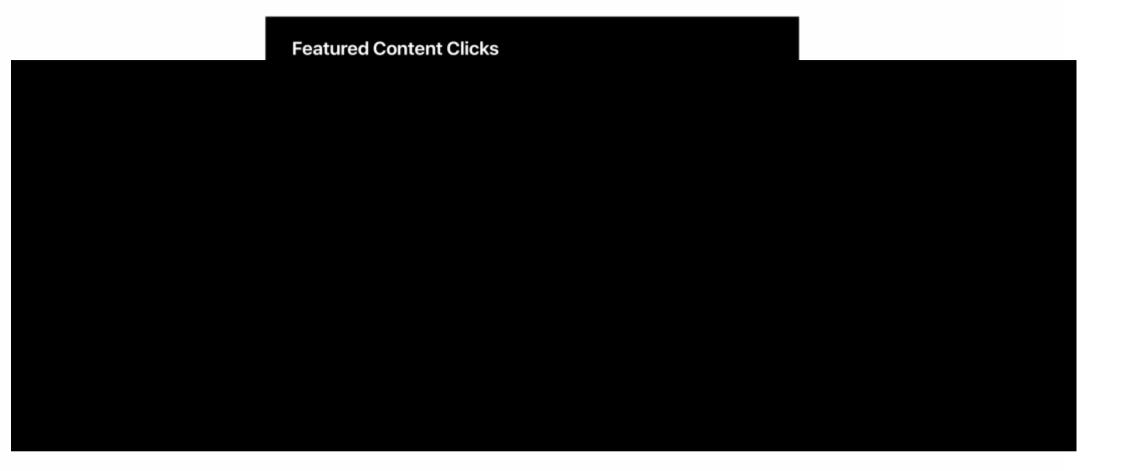


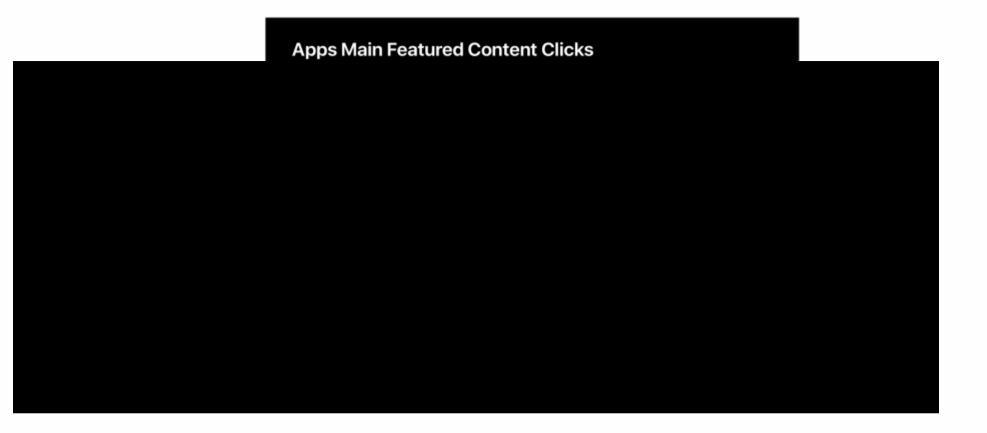
Summary

Great experience for 280 million iOS gamers Sustainable model for premium developers Supports iPhone, iPad, AR/VR, etc.

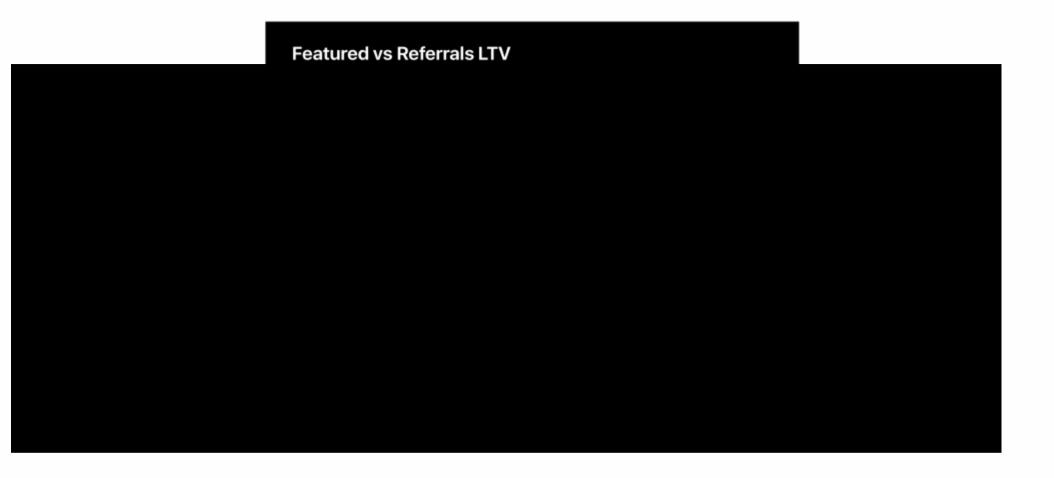








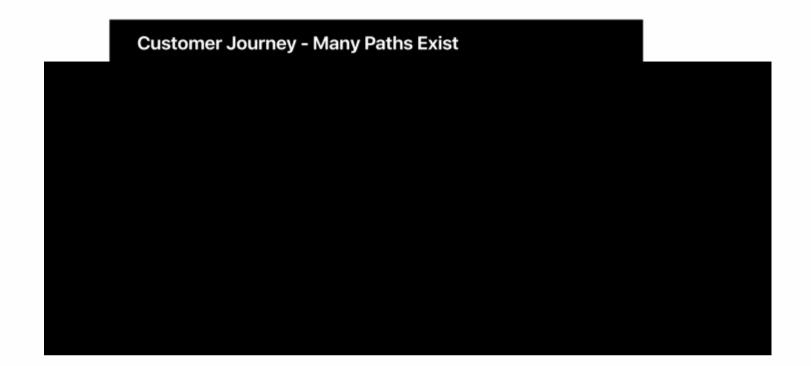


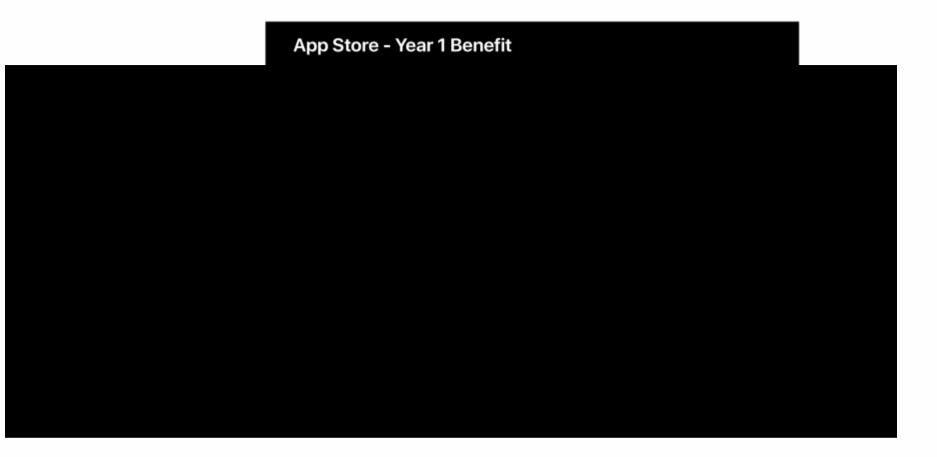




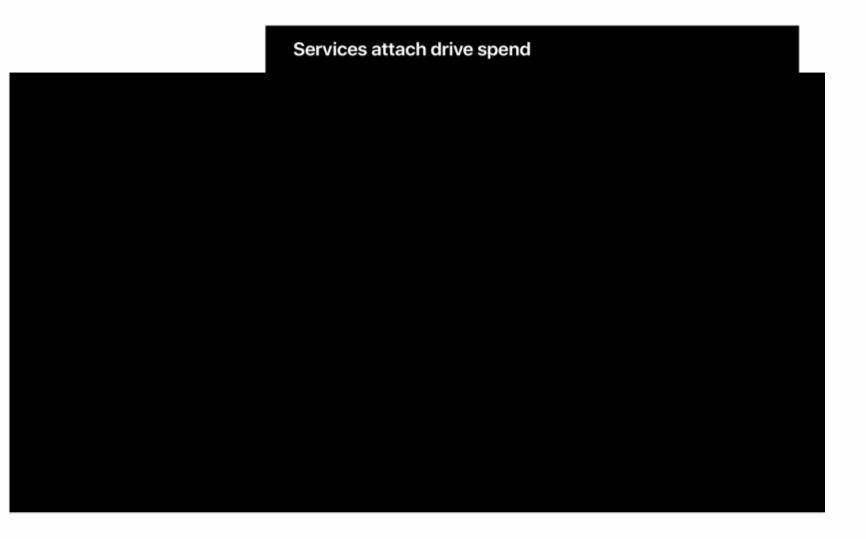














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